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SHAPED BREECHCLOTHS FROM PERU

BY

CAROLYN M. OSBORNE

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CAROLYN M. OSBORNE

INTRODUCTION

During the spring semester of 1947, the class in textile technology at the University of California under Dr. Lila M. O'Neale made an analysis of the Chíncha plain-weave cloths¹ obtained by Dr. Max Uhle and deposited in the Museum of Anthropology of the University of California at Berkeley (designated as UC in this paper). In the series were two breech- or loin-cloths which had been shaped in the process of weaving. As these did not strictly fall into the category of "plain-weaves," they were set aside for future study. For comparative material, Dr. O'Neale added descriptions and partial analyses of nine shaped cloths from Peruvian museums, which she had studied while in Peru on a Guggenheim Latin American Exchange Fellowship. Seven of these were from the Museo de Historia Natural in Lima, and two from the Museo de Antropología y Investigaciones Prehistóricas in Magdalena Vieja. Catalogue numbers of specimens from these museums are preceded by MHN and MAP respectively. Finally, a group of textiles obtained by Dr. T. D. McCown at Hungara and now in the Museum of Anthropology was found to contain eleven shaped pieces. These, too, were analyzed and thus this paper is based on the study of twenty-two shaped cloths.

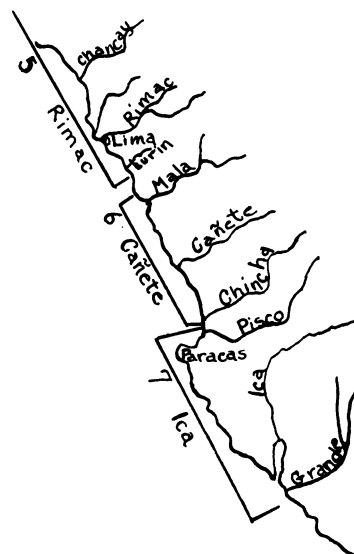
I wish to acknowledge the aid received from Dr. L. S. Cressman of the University of Oregon and my husband, Douglas Osborne, who together are responsible for the majority of the photographs. These two and Dr. T. Stern read the manuscript and made suggestions. Mr. Junius Bird of the American Museum of Natural History very helpfully sent data on shaped cloths and fragments which were being analyzed there. This material was used for comparative purposes. Miss Helen Wardle of the University of Pennsylvania Museum gave information on two of Uhle's specimens from Pachacamac.

Lastly, this paper owes its existence only to the training and inspiration which Dr. Lila O'Neale gave to all her students at the University of California. She saw in the shaped breechcloths a problem which might eventually be solved and promoted this work with enthusiasm and many helpful suggestions. I know that the study would have been immeasurably better if she could have guided it throughout.

AREAS AND SITES

This study treats of three small collections of textiles from four sites. Exact provenience of the textiles is unknown, so that they are not primarily useful to the archaeologist as chronological material, except for the

¹O'Neale, et al, 1949.



Central Division of the Peruvian Co-Tradition
(after Bennett, 1948)

fact that all of the sites represented by these shaped pieces are late; i.e., of the last centuries before the Conquest. From an aesthetic viewpoint, these cloths have little to add to textile literature. From the technological viewpoint, however, they are examples of a weaving specialization which, if not complicated, is unusual.

The following tabulation shows the geographical range of the specimens on which this study is based (table 1).

Total number of specimens: 22.

Ate (Rímac Valley): Museo de Historia Natural, by excavation in 1906, 7 pieces (MHN: 2608, 2609, 2610, 2611, 2612, 2613, 2614). Of these, two are fragmentary (MHN: 2609, 2612). This group is incorporated solely from notes of Dr. O'Neale.

Chíncha (Chíncha Valley): University of California Museum of Anthropology, Dr. Max Uhle, by excavation at Site D (classified by Uhle as "last pre-Inca period"),² 1 piece (UC 4-3883c); Site F, 1 piece (UC 4-4122c).

Hungara (Cañete Valley; fortress of Chuquimancu of Means):³ University of California

²Kroeber and Strong, 1924, p. 8.

³Means, 1931, p. 191.

Museum of Anthropology, recovered by Dr. T. D. McCown in 1941: 11 pieces (UC: 16-7193, 16-7194, 16-7195, 16-7196, 16-7197, 16-7198, 16-7199, 16-7201, 16-7202, 16-7204, 16-7205). Of these, 5 have woven breadths which are fragmentary (UC: 16-7194 A and B, 16-7196 A and B, 16-7197 B, 16-7204 B, 16-7205 A and B).

La Puntilla (Paracas, Pisco Valley): "Objetos de la cultura Chincha, procedentes de La Puntilla." Museo de Antropología y Investigaciones Prehistóricas, Magdalena Vieja: 2 pieces (MAP: 8738 and 8739). The discussion of this group is based entirely on notes by Dr. O'Neale.

TECHNIQUE OF SHAPING WEBS

All of the specimens here discussed are shaped breechcloths. Variations of styles in the shaping from the four sites can be seen by comparing the scaled drawings of specimens MHN 2613, UC 4-3883c, UC 16-7195, and MAP 8738 (fig. 1). Each of these drawings, with the exception of the one illustrating the La Puntilla specimen, represents only one of two more or less identical breadths.

In this paper the two breadths have been arbitrarily designated A and B, A being the left breadth and B the right as the cloths were pinned out by the author. Only for the brocaded specimens from Ate, and the one breechcloth from Hungara which has 2-loop needleknitting with reversed direction of embroidery stitching (UC 16-7196), could a definite inner and outer side of the piece be determined. In all others, the cloth could have been worn either side out.

The loomstring at the front end of the breechcloth (termed "front" because of its greater width, ornamentation, or other special characteristic) is called Loomstring 1; the one at the rear, Loomstring 2. Where there is no great difference in the ends (as in specimen UC 16-7195), the distinction is an arbitrary one, of no consequence.

Other terms used in this paper will be found in the Glossary, p. 180.

The technique of shaping was probably the same for the entire series. It lies solely in the regulation of the warp threads: no extra warps were added, nor have any been removed. This is clearly indicated in the warp

counts of the textiles: in UC 4-3883c, one of the Chincha cloths, for example, a count of 22 warps per inch at the loomstring (width $18\frac{1}{2}$ in.) equals the count of 80 warps per inch at the narrowest width (5 in.); i.e., a total warp setup of 400 to 407 warps. Regulation of the warps was accomplished by drawing in the wefts; the skill of the weaver is attested by the subsequent even or uneven spacing of the warps. A marked congestion at the selvages and loose spacing of the warps in the center of the textile indicate a careless or unskilled weaver (UC 16-7198, pl. 10,b). A careful worker spaced her warps either as she wove or after the web was completed but was still held at tension on the loom to produce a superior textile (UC 16-7202, pl. 11,d).

Two specimens (UC 4-4122c; UC 16-7198) have two warp setups joined in the center (i.e., narrowest section) while the warp was being made, thus forming a warp lock. In both these specimens the lock was made by using an extra length of multiple-ply yarn. Warps from either end were looped around this key or skeleton weft, without looping through each other (pl. 10,c). Of necessity, the key weft was left in place. In addition to being the mainstay of the warp locking, this heavy thread also served as the holder for the narrow width, drawing together the warps to serve as a guide to the weaver in the shaping process. I would postulate the use of a similar heavy guide weft in the weaving of the other pieces; however, no such heavy weft appears on the other breechcloths nor, unfortunately, are there any unfinished breechcloths on looms to substantiate any such theory. Only the fact that it would greatly facilitate the weaving warrants the supposition.

Another possibility is the use of a series of tenters of varying widths to guide the weaver. Although these would certainly aid the construction, they would not obviate the need for care in spacing of warps and might replace the easy curve of the shaping with jerky inward drawing. All in all, I am inclined to feel that the use of tenters would show on the finished textile, but no such evidence appears.

All of the shaped cloths are of plain weave (one-over-one); a portion only of the La Puntilla specimen MAP 8739 is in semibasket weave (one-over-two). However, the shaping of the web has in no way hampered the weaver in the employment of such superstructural techniques as brocading (MHN: 2608, 2609, 2610, 2611, 2612) or from using alternating colors in warp and weft to produce checks or gingham (UC 4-4122c; UC: 16-7197, 16-7202, 16-7204) and plaids (UC 16-7205).

ANALYSIS OF THE CLOTHS

ATE

The Ate specimens (MHN 2608-2614) were excavated from the rinconada of Ate in the Valley of Lima by an expedition from the Museo de Historia Natural in October, 1906. The site dates from "últimos siglos antes de la Conquista," according to the museum label on the specimens.

All of the Ate breechcloths ("delantales")⁴ were woven in two breadths, joined by a whipping-stitch seam

down the center length. The front end of the breechcloths is wider than the rear, giving the typical shape represented in the scaled drawing of specimen MHN 2613. In the brocaded cloths, it was invariably this wider end that was so decorated, suggesting that it was worn in front. Both webs of the ornamented breech-

⁴The term "delantal" (apron) as here used is misleading, as these cloths passed between the legs and did not form simply a frontal covering.

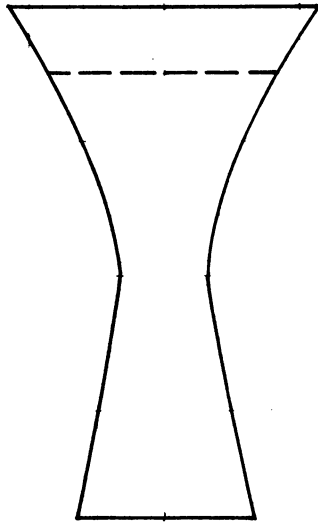
cloths were brocaded, indicating that they were undoubtedly not worn double thickness as was the Chinch specimen (UC 4-3883c) but were worn with a tremendous fullness in the front -- in one specimen 45 inches (MHN 2608).

The placing of the ornamentation of the Ate brocaded cloths is of interest, particularly in relation to the method of wearing the breechcloth. In all of these specimens there is an undecorated portion of 4 to 5 inches from the front loomstring. If the garment had been worn with the narrowest part between the legs, and the ends overhanging a waist belt, then part of the brocading would have been concealed by the overhanging undecorated section. The possibility that the rear corners (Loomstring 2) of the textile were tied to a belt with no end overhanging, and that a section of 8 to 12 inches was worn overhanging in the front cannot be overlooked. However, there are now no ties on the textiles, and this position would throw the narrowest section too far forward. No staining is mentioned in Dr. O'Neale's notes; hence it is difficult to reconstruct the method of wearing the breechcloth. For five of the specimens, too, the location of the narrowest section, presumably the part worn between the legs, cannot be accurately determined.

The Ate specimens, like all the others, are plain-weave cottons. Wool is used only for the brocading yarns, which form no essential part of the fabric.

The following summaries of analysis are from the notes of Dr. O'Neale.

MHN 2608. Single breadth of two. Dashed line indicates beginning of brocading. Narrowest section placed in exact center of length.



Condition: complete.

Dimensions: total length, 38 in. Width: two breadths,⁵ totaling 45 in. at Loomstring 1; 13 in. in narrowest spot; 25 in. at Loomstring 2.

⁵This width has been separated into two equal breadths for the chart (table 1) and the scaled diagram. This note applies to the 4 succeeding Ate specimens.

Thread count: 68x10.⁶

Weave: plain, warp face. Onlay type brocading with extra yarn in the same shed as the basic weft.

Yarns: warp, single-ply cotton, brown, twisted to crepe. Weft, same. Brocading yarn, 2-ply wool, rose-red and maroon; medium twist.

Edge finishes: two breadths joined by a whipping-stitch center seam.

Design and color: V-shaped arrangement of bird figures in rose-red and maroon wool. Pattern begins with solid color stripes 5 in. from Loomstring 1.

MHN 2609.

Condition: fragment.

Dimensions: total length, 34 in. Width: two breadths totaling (?) in. at Loomstring 1; 12 in. in the narrowest spot; 28 in. at Loomstring 2.

Thread count: 44x44.

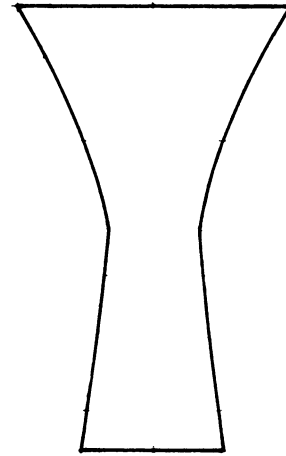
Weave: plain. Onlay type brocading with extra yarn in same shed with basic weft.

Yarns: warp, cotton, single-ply, brown crepe twist. Weft, same. Brocading yarn, wool, 2-ply, medium twist, rose-red and yellow.

Edge finishes: two breadths joined by a whipping-stitch center seam.

Design and color: border begins about $4\frac{1}{2}$ in. from Loomstring 1. V-shaped arrangement of bird motives in diagonal rows.

MHN 2610. Single breadth of two. Narrowest section placed in exact center of length.



Condition: complete.

Dimensions: total length, 33 in. Width: two breadths totaling 40 in. at Loomstring 1; 13 in. in the narrowest spot; 22 in. at Loomstring 2.

Thread count: 44x36.

Weave: plain. Onlay type brocading with extra yarn in same shed as basic weft.

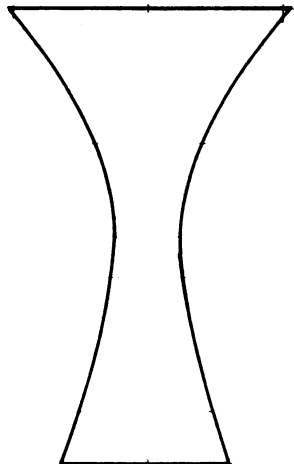
Yarns: warp, cotton, 2-ply, white, crepe twist. Weft, same. Brocading yarn, cotton, single-ply, brown, crepe twist.

⁶Notes do not state where the count was taken on any of the Ate specimens.

Edge finishes: two breadths joined by a whipping-stitch center seam.

Design and color: V-shaped arrangement of small geometric figures between narrow bands of plain weaving in brown cotton.

MHN 2611. Single breadth of two. Narrowest section placed in exact center of length.



Condition: complete.

Dimensions: total length, 34 in. Width: two breadths totaling 41 in. at Loomstring 1; 11 in. at the narrowest spot; 25 in. at Loomstring 2.

Thread count: 48 x 48.

Weave: plain. Onlay type brocading with extra yarn carried in same shed as basic weft.

Yarns: warp, cotton, white, single-ply, crepe twist. Weft, same. Brocading yarn, cotton, brown, 2-ply, hard twist.

Edge finishes: two breadths joined by a whipping-stitch center seam.

Design and color: V-shaped motive of birds and reciprocal hooks.

MHN 2612.

Condition: fragment.

Dimensions: length (?). Width: two breadths totaling 42 in. at Loomstring 1; no other measurements possible.

Thread count: 44 x 46.

Weave: plain. Onlay type brocading with extra yarn in same shed as basic weft.

Yarns: warp, cotton, white, 2-ply, crepe twist. Weft, same. Loomstrings, light blue. Brocading yarns, wool, 2-ply, medium twist, red and blue-purple.

Edge finishes: two breadths joined by a whipping-stitch center seam.

Design and color: border begins about 4 in. from Loomstring 1. Design of V-shaped arrangement of geometric forms. Colors red and blue-purple.

MHN 2613 (fig. 1, a).

Condition: complete.

Dimensions: total length, 33 in. Width measurements taken on single breadth about every

4 in. down the center seam: Loomstring 1, 20 in.; 13 in.; 10 in.; 7½ in.; 6 in.; 6 in.; 7½ in.; 8 in.; Loomstring 2, 12 in.

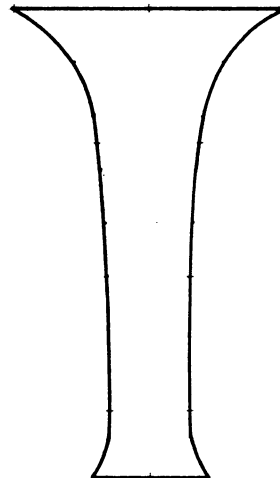
Thread count: 48 x 11.

Weave: plain, warp face.

Yarns: warp, cotton, white, single-ply, crepe twist. Weft, same. Loomstrings, cotton, 2-ply, hard twist, blue.

Edge finishes: two breadths joined by a whipping-stitch center seam.

MHN 2614. Single breadth of two.



Condition: complete.

Dimensions: total length, 35 in. Width measurements taken on a single breadth about every 4 in. down the center seam: Loomstring 1, 20 in.; 11 in.; 8 in.; 7 in.; 6½ in.; 6 in.; 6 in.; 6 in.; Loomstring 2, 8½ in.

Thread count: 44 x 40.

Weave: plain.

Yarns: warp, cotton, single-ply, white, crepe twist. Weft, same. Loomstrings, brown.

Edge finishes: congestion at selvage for about ½ in. Two breadths joined by a close whipping-stitch center seam.

CHINCHA

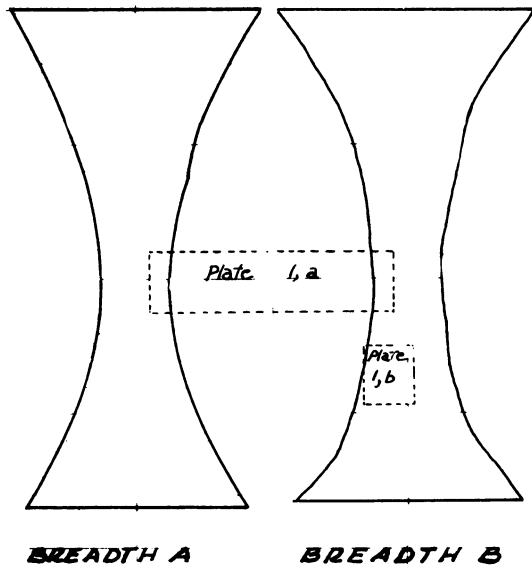
Both of the Chincha breechcloths, like the Ate specimens, have the same general shape: the two ends of the cloths are approximately the same width (fig. 1, p. 175). Thus the breechcloth, when looped over a belt around the waist, hung the same in the front and rear. The only ornamented cloth (UC 4-4122c), however, had only the front embellished, again like the Ate cloths; the stain in the plain white section indicates without doubt that this part was worn in back.

Both Chincha specimens fit into the category of plain weaves (over-one-under-one): in neither of these are superstructural yarns added as in the brocaded Ate cloths. The ornamentation of specimen UC 4-4122c consists of finely executed checking in brown and white cotton.

The two Chincha breechcloths aid somewhat in determining how the shaped cloths were worn. The checked

portion of the finest section comprises almost exactly one-half the web; one would assume that this breechcloth hung over a waist belt equally in the front and the rear. This is also true of the plainer cloth (UC 4-3883c).

UC 4-3883c. Dotted lines indicate areas shown in plate 8, a, b.



Breechcloth UC 4-3883c, obtained by Dr. Max Uhle from Site D in the Chinchá Valley, dates from the last pre-Inca period. Site D, Huaca de Alvarado, yields chiefly Late Chinchá I material, dating apparently from 1000 or 1100 to approximately 1400.⁷ This may place it chronologically with the Ate material, "últimos siglos antes de la Conquista" (which certainly gives leeway enough).

The breechcloth consists of two shaped cloths joined by a whipping-stitch seam down the central axis. That the breechcloth was worn double, unlike the Ate and Hungara specimens, is indicated by the stains which penetrate each half. The piece is totally unornamented; its interest lies in the fine workmanship, especially the equal spacing of the warps as the tension on the weft increased. The join near the center of each web indicates that the weaver wove from the heavy loomstring wefts at each end to the narrow center section; in this way she obviated the necessity of loosing the weft tightness. In the formation of the hourglass-shaped cloth, it was technologically easier to tighten the weft hold on the warps from the two ends than to tighten from one loomstring and subsequently release the tension for the second half when proceeding to the second loomstring. The difficulties of weaving this particular breechcloth are augmented by the creped condition of the fine weaving yarns, both warp and weft: the crinkling caused by excessive twisting gives the cloth its pebbly appearance (pl. 8, a). Three picks of a 12-ply loomstring weft held the warps in place for the weaver at either end of the two webs and gave the otherwise flimsy warp some stability. There is

only slight congestion at the side edges; so little, indeed, that one supposes the weaver might have spaced her edge warps with a sharp tool after the weaving was completed. An attempt at duplication of the cloth by the author, using threads which though equally fine lacked the crepe twist, resulted in great congestion at the selvages and attendant wide spacing in the center of the web. The whole Chinchá cloth attests a high development of craftsmanship in the weaving of the shaped cloths.

In this textile, unlike the next, the weft counts vary only slightly from the widest breadth (34 wefts per in.) to the narrowest breadth (38 wefts per in.). There is no warp-faced section, although the count in the narrowest area indicates twice as many warps (80) as wefts (38). This is owing to the fineness of the threads which, even in a warp count of 80 to the inch, do not form a substantial fabric.

Summary of analysis:

Condition: complete, Breadths A and B.

Dimensions: Breadth A, total length 37 in.

<u>Measurement taken at</u>	<u>Width (in in.)</u>	<u>Thread count (per sq. in.)</u>
Loomstring 1	18½	22 x 27
4 in.	13¼	29 x 27
8 in.	10	33 x 32
12 in.	7¾	40 x 35
16 in.	6	60 x 42
20 in.	5	80 x 38
24 in.	5½	58 x 42
28 in.	7¼	48 x 38
32 in.	10¼	32 x 28
36 in.	14¼	24 x 38
Loomstring 2	15¼	

Breadth B, total length 36½ in.

<u>Measurement taken at</u>	<u>Width (in in.)</u>	<u>Thread count (per sq. in.)</u>
Loomstring 1	19	warps at extreme right 17 warps in center 15 x 34 warps at extreme left 19
4 in.	13	24 x 26
8 in.	9½	32 x 28
12 in.	8	47 x 32
16 in.	6	55 x 37
20 in.	5¼	68 x 36
24 in.	5¾	61 x 37
28 in.	7½	41 x 32
32 in.	10	31 x 32
Loomstring 2	17	warps at extreme right 20 warps in center 25 x 35 warps at extreme left 22

Weave: plain.

Yarns: warp, white cotton, single-ply, Z-twist,

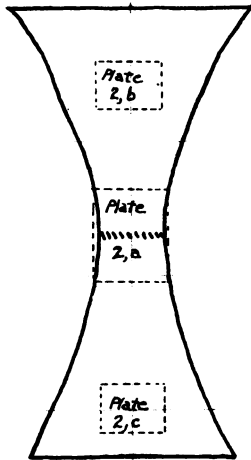
⁷Kroeber and Strong, 1924, p. 50.

crepe. Thread size ranges around a No. 50 sewing thread. Weft, same. Loomstrings, white cotton, 12-ply, S-twist; each single, Z-twist. Whipping-stitch yarn, white cotton, single-ply, hard twisted, much heavier than weaving threads.

Edge finishes: selvage, simple, very slight congestion. Whipping-stitch seam joining the two breadths. Loomstring, three picks at each end of both breadths.

Join: occurs on both breadths very near the narrowest section, i.e., about 19 in. from Loomstring 1. Evident in looser spacing of wefts.

UC 4-4122c. Warp lock in center. Dotted lines indicate areas shown in plates 9 and 10, a.



Breechcloth UC 4-4122c was obtained by Dr. Max Uhle from Site F, "North of La Cumbe (circa Las Palmas)." Site F cannot be located as accurately as the previous Site D, either spatially or chronologically. It seems, however, to belong in general to the Late Chincha II period, transitional between Late Chincha I and Inca.⁹

This shaped garment consists of only one web, 33½ inches long, which is considerably heavier than the previous piece. It is also a plain-weave fabric, but the front end is a brown and white check (and stripe). The alternate brown and white warp stripes of this half are joined to the plain white of the second half by means of a heavy weft thread, the warps of each section alternately locking over this weft, but not through each other (pl. 10, c). The possibility that this breechcloth might have been woven in two pieces, subsequently joined by picking up the warps from the two webs alternately on the key weft has not escaped my attention. The exact method of construction can, of course, never be known. As in the case of brocading versus embroidery, in which only a mistake in following through perfectly reveals the ornamentation as the latter rather than the former, it is the perfection of the alternation here which convinces me that this is indeed a warp lock. The absence of cross-overs of warp loops, which would be

⁹Ibid., p. 8.

⁹Ibid., pp. 24-25, 28.

almost inevitable in the attempt to pick up 468 brown and white warps and an equivalent number of white warps in a 4½ inch span, tends to prove that the key weft was part of the original setup and that the breechcloth is actually one textile breadth.

This key weft also serves as a medium for holding the warp threads in this center portion to the desired narrow width of 4 inches, just as the heavy brown loomstring wefts at each end regulated the 18-inch and 15-inch widths. The shaping process here produced a warp-faced cloth in the narrowest section (thread count 104 x 21); the loomstring ends show a square mesh (thread count 31 x 36). There is almost no congestion at the edges and the spacing of the warps is very even and regular throughout.

The checked section of the breechcloth was set up with alternate warp stripes of white and brown cottons (natural brown ?); 10 to 13 white warps alternated with 14 to 16 brown (brown warps are a little finer than the white). For the weft throws, brown and white were alternated from the loomstring to within 5½ inches of the warp lock. For the remaining section, the weaver used an all-white weft, giving a warp-striped cloth. Here, in the narrowest section as in the previous textile (UC 4-3883c), occurs the join of the checked half of this specimen (pl. 9, a). It is so carefully executed as to be almost unnoticeable, but it indicates that the weaver, after setting up the warp with its loomstrings, wove a 1½-inch holding strip at the key weft, then reversed the loom to weave the length of the cloth from loomstring toward the center. This same procedure was followed in the plain white section where the join between the narrow heading strip and the main body of the weaving is more visible.

Summary of analysis:

Condition: complete, single breadth.

Dimensions: total length, 33½ in.

<u>Measurement taken at</u>	<u>Width (in in.)</u>	<u>Thread count (per sq. in.)</u>
Loomstring 1	18	31 x 36
4 in.	12½	37 x 31
8 in.	9½	57 x 33
12 in.	6½	77 x 21
16 in.	4½	
17 in. (warp lock)	4½	104 x 21
20 in.	5½	74 x 22
24 in.	7½	54 x 31
28 in.	10	41 x 28
Loomstring 2	15	36 x 41

Weave: plain, warp face in center section.

Yarns: warp, brown cotton (natural ?), single-ply, Z-twist, very hard; white cotton, single-ply, Z-twist, crepe. Weft, same. Loomstring 1, white cotton, 6-ply, S-twist; each single, Z-twist, medium. Loomstring 2, brown cotton, 6-ply, S-twist; each single, Z-twist, medium.

Edge finishes: selvage, simple, little congestion. Loomstring, three shots at each end.

Join: visible in each half of the breadth, approximately 1 in. from the key weft. Well executed.

Warp stripings: 14 to 16 brown warps give equivalent width to 10 to 13 white warps. Total warp setup, 20 brown alternated with 20 white warp stripes.

HUNGARA

This group of textiles was recovered from the spoil heap at Hungara (Means's fortress of Chuquimancu)¹⁰ in the modern Cañete Valley (old Huarco) by Dr. T. D. McCown. The sixteen textiles preserved comprise a highly selected group from a large quantity of very badly deteriorated cloths. Much of the store consisted of bundles of four or five cloths tied together in knots. One of the specimens here considered (UC 16-7201, pl. 10,f) was so knotted. All except this piece were washed in Lima. No pottery was recovered to use for chronological placement, but the material is late, probably just pre-Inca, or Inca (?).

Of the sixteen specimens in the Hungara collection, eleven were shaped breechcloths; one additional specimen was an unshaped breechcloth. With one exception (UC 16-7193), all of the breechcloths were woven in two breadths, joined down the center. The lone cloth of a single breadth is entirely different in shape and character than any other such specimen (pl. 10,d). It fits in more clearly with the unshaped specimen shown in plate 10,e, but its undoubted shaping places it within the realm of this study.

All of the Hungara specimens are of cotton, both white and brown. Several have front edges embellished with a decorative edge of wool (not identified as to type) in the needleknitting technique. This, apart from the ever-present whipping-stitch center seam, is the only needlework done on the cloths. Ornamentation of the cloths is otherwise accomplished by warp plus weft stripings (i.e., checks and plaids), and in one specimen (UC 16-7198) by locking a brown upper (front) warp to a white lower (rear) warp by means of a key weft.

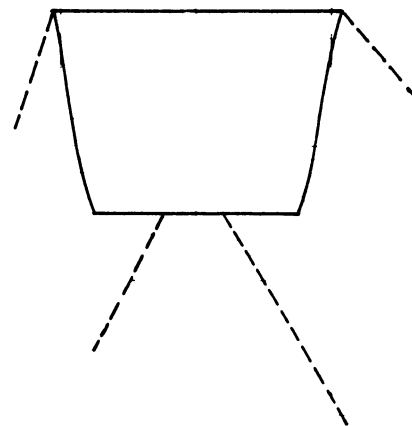
All specimens with the exception of the atypical cloth (UC 16-7193) exhibit uniformity in the extremely fine spinning, single-ply ranging from a No. 80 to No. 100 sewing thread. This attests, of itself, that the breechcloths were not turned out hastily from the weaver's hands. In fact, the use of fine threads made the weaving more difficult, the equal spacing of warp and weft during weaving almost impossible.

UC 16-7193 (pl. 10,d).

This breechcloth, already mentioned, is atypical in shape and therefore differs in technique from the other specimens heretofore discussed; it was shaped merely by drawing in the weft, without subsequent release of weft tension. The presence of the joining strip at the narrow (rear) end of the cloth, shows that the weaver first wove a heading strip at that end, reversed the loom, and, beginning at the other end, wove back toward the heading strip. The heavy warp-face construction of the cloth also makes it atypical, more closely akin to the better known unshaped breechcloths from Peru. Typologically this specimen is simpler than the hourglass-shaped breechcloths and might conceivably be precedent.

¹⁰Means, 1931, pp. 190-191.

UC 16-7193 (pl. 10,d)



Although the breechcloth bears a superficial resemblance to the beaded aprons (delantales) of the Guiana Indians (Macusi of Farabee¹¹ and Waiwai¹² and Akawai¹³ of Roth) the technique of its manufacture, as well as its use, is different. The shaping of the Akawai aprons is accomplished by the addition of extra warps as the widening is desired. The warp threads are at all times perpendicular to the weft; there is no angle of meeting. It is obvious from looking at plate 10,d that, in use, this breechcloth (UC 16-7193) was folded where it passed between the legs. It was therefore not truly an apron, as are the Guiana specimens, which hang in front of the wearer.

Summary of analysis:

Condition: complete, single breadth.

Dimensions: total length, 15 in.

Measurement taken at	Width (in in.)	Thread count (per sq. in.)
Loomstring 1	21½	48 x 16
4 in.	19¾	50 x 14
8 in.	18½	62 x 13
12 in.	17	62 x 16
Loomstring 2	15½	60 x 11

Weave: plain, warp face.

Yarns: warp, cotton, 2-ply, Z-twist, very loose; each single, S-twist, medium to hard. Weft, cotton, 2-ply, Z-twist, hard; each single, S-twist, medium to hard. Warp and weft bear remnants of a rose-brown color which has almost completely faded. Loomstrings, cotton, 4-ply; each ply same as weft yarns (2-ply).

Edge finishes: selvage, simple, no congestion. Loomstrings, 3 shots at each end. Wholly covered by whipping stitch. Whipping stitch of cotton, same thread as weft, completely around the garment. Probably served as reinforcement only, hardly ornamental.

¹¹Farabee, 1924, p. 60.

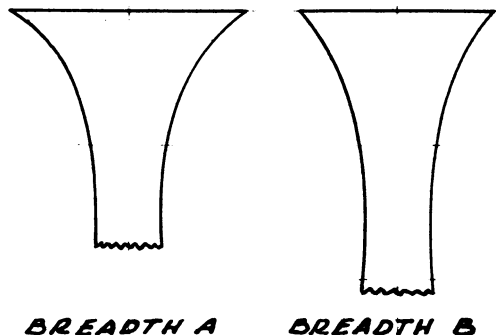
¹²Roth, 1929, pl. 34, p. 83.

¹³Roth, 1924, pp. 120-121.

Ties at the corners of Loomstring 1 are $9\frac{1}{2}$ in. long (complete); on Loomstring 2, $5\frac{1}{4}$ in. from the corners, one is 18 in. long (complete) and the second is 11 in. long (broken). Two-ply yarns, same as weft, drawn through, divided into 3's, and braided.

Join: approximately 1 in. from lower (narrow) end. Extends $1\frac{1}{2}$ to 2 in. in width. Evident because of looser spacing of wefts.

UC 16-7194



This plain breechcloth fragment adds one minor detail to the discussion of the breechcloths as a whole. Its "gauzy" appearance and worn condition are characteristic of many of the cloths from the Hungara spoil heap. Of interest are the longitudinally wrinkled lines along only the outer edges of the two breadths. These indicate that this breechcloth was worn in single thickness in contrast to the Chinchá cloth of comparable texture (UC 4-3883c) which, it will be recalled, was folded for wear. All Hungara specimens of two breadths were worn in the same manner. Like others of the Hungara specimens, this entire cloth was rose color (Maerz and Paul 5-G-1).¹⁴ Much of the color has been leached from it, but the inner core of the warp and weft yarns and the loomstrings is true rose color.

Summary of analysis:

Condition: poor, fragmentary, both breadths.

Dimensions: Breadth A, fragmentary length, $17\frac{1}{2}$ in.

Measurement taken at	Width (in in.)	Thread count (per sq. in.)	Indicated total warp setup
Loomstring 1	$16\frac{1}{2}$	28 x 58	462
4 in.	$9\frac{1}{4}$	43 x 39	398
8 in.	$6\frac{1}{2}$	60 x 43	390
12 in.	$5\frac{1}{2}$	84 x 54	462
$17\frac{1}{2}$ in.	5	95 x 57	475

Breadth B, fragmentary length, $21\frac{1}{2}$ in.

Measurement taken at	Width (in in.)	Thread count (per sq. in.)	Indicated total warp setup
Loomstring 1	$14\frac{1}{2}$	30 x 52	435
4 in.	$8\frac{3}{4}$	40 x 37	350
8 in.	$6\frac{1}{4}$	68 x 48	425
12 in.	$5\frac{1}{2}$	88 x 56	462
16 in.	$4\frac{3}{4}$	90 x 56	427
$21\frac{1}{2}$ in.	$5\frac{1}{4}$		

¹⁴Maerz and Paul, 1930.

These figures clearly indicate the join and a general carelessness in spacing of the warps during and/or after weaving. Thread counts were taken along the central axis of each breadth. The extremely low figures of the count at the 4-in. and 8-in. intervals of Breadth A, and the 4-in. interval of Breadth B, show the join, where no attempt at spacing the warps was made.

Weave: plain.

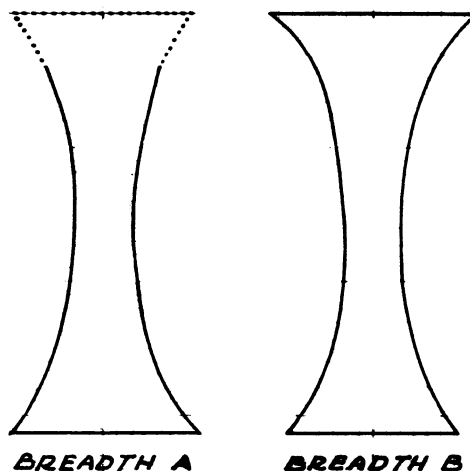
Yarns: Breadth A and B the same. Warp, cotton, single-ply, S-twist, hard to crepe. Weft, same. Thread sizes range from a No. 80 to finer than a No. 100 cotton sewing thread. The evenness and fineness of the spun cotton is a perpetual source of wonder to the student. Loomstring, 6-ply, Z-twist; each single, S-twist and essentially the same as the warp and weft. Stitching thread, cotton, 3-ply, Z-twist, hard.

Edge finishes: selvage simple, little congestion. Loomstrings, 3 picks at each end of both breadths. Two breadths joined by a whipping-stitch center seam which picks up every 4 to 5 wefts; a very fine seam.

Color: warp and weft, rose color (Maerz and Paul 5-G-1).

Join: Breadth A, about 2 in. from Loomstring 1 and extending about 3 in.; visible because of poor spacing of wefts and warps. Breadth B, about 2 in. from Loomstring 1, extending about 5 in.

UC 16-7195 (fig. 1; pl. 4, a). Dotted line indicates estimated measurements.



This specimen exhibits the great wear to which the textiles of Hungara were subjected before they were placed in the graves; by any standards this breechcloth was ready for discard. Like the preceding specimen (UC 16-7194), this breechcloth was once a rose color (Maerz and Paul 5-G-10). Its fineness of spinning and weaving give it added merit.

Summary of analysis:

Condition: both breadths complete but in poor condition.

Dimensions: Breadth A, total length $31\frac{1}{4}$ in.

<u>Measurement taken at</u>	<u>Width (in in.)</u>	<u>Thread count (per sq. in.)</u>	<u>Indicated total warp setup</u>
Loomstring 1	13 (est.)	26 x 41	
4 in.	8½	37 x 44	314
8 in.	6½	47 x 32	305
12 in.	4½	72 x 35	306
16 in.	4½	80 x 34	360
20 in.	5½	66 x 33	347
24 in.	6½	45 x 27	292
28 in.	9½	28 x 34	266
Loomstring 2	14½	20 x 52	290

Breadth B, total length 31¼ in.

<u>Measurement taken at</u>	<u>Width (in in.)</u>	<u>Thread count (per sq. in.)</u>	<u>Indicated total warp setup</u>
Loomstring 1	15 (est.)	28 x 49	
4 in.	8½	39 x 33	321
8 in.	6½	58 x 35	362
12 in.	4½	72(side) x 34	324
16 in.	4	78 x 35	312
20 in.	4½	82 x 40	369
24 in.	6	58 x 36	348
28 in.	8	48 x 38	384
Loomstring 2	12½	34 x 84	425

Weave: plain.

Yarns: Breadths A and B the same. Warp, cotton, single-ply, Z-twist, very hard to crepe. Weft, same. Size of warp and weft yarns ca. No. 80 sewing thread. Loomstrings, cotton, 4-ply, Z-twist, loose to medium; each single, S-twist. Stitching thread, cotton, 2-ply, Z-twist.

Edge finishes: selvage, simple, little congestion. Loomstrings, 3 picks at each end of each breadth. Whipping-stitch center seam joining the two breadths catches every 2 to 4 warps and is spaced every 2 to 8 wefts.

Color: warp, weft, loomstrings and whipping thread once a rose color (Maerz and Paul 5-G-10; rosewood). Color largely leached from cloth.

Join: Breadth A, 3 in. from Loomstring 2; 2½ to 3 in. wide. Most visible because of poor spacing of warps. Note evidence in thread counts. Breadth B, about 3 in. from Loomstring 2. Not as visible as in Breadth A.

UC 16-7196.

This small fragment of a shaped cloth exhibits several interesting details of construction. The single-ply thread of the cloth is of brown and white cotton spun together and alternately. Fibers of brown cotton were spun into a short length of yarn; white fibers were added to continue the yarn. The yarn was thus pure brown for 3 to 4 inches, merged brown and white for 1 to 2 inches, pure white for 3 to 4 inches, etc. This yarn mixture gave the cloth the appearance of checking; some modern tweeds employ the same technique.

Like the others, this specimen is woven in two breadths joined by a whipping-stitch center seam. The outer edge of each of the two breadths is ornamented with needleknitting involving two loops,¹⁵ one at the very

edge and the other on that side of the cloth which, hanging down in front, would have been visible as the garment was worn. This gives a definite "right" and "wrong" side to this breechcloth. The needleknitting is done in wool (variety not ascertained) in red (Maerz and Paul 5-I, J-6; gypsy red and Harvard crimson). Since Dr. O'Neale's paper cited below gives complete analysis, with diagrams of the varieties of needleknitting observed in all the Hungara specimens, it has been considered unnecessary to go into detail of construction in this paper.

Summary of analysis:

Condition: Breadths A and B, fragments.

Dimensions: Breadth A, fragmentary length 8½ in.

<u>Measurement taken at</u>	<u>Width (in in.)</u>	<u>Thread count (per sq. in.)</u>
End (no loomstring)	6½	54 x 50
3 in.	6	70 x 47
6 in.	5½	74 x 40

Breadth B, too fragmentary to make reliable measurements or thread counts.

Weave: plain.

Yarns: warp, brown and white cotton, single-ply, S-twist, hard to crepe. Size ranges between a No. 80 and No. 100 cotton sewing thread. Weft, same. Loomstrings, none present. Needleknitting yarn, wool (?), 2-ply, S-twist, very loose to loose; each single, untwisted or so loosely twisted as to show no direction; color, Maerz and Paul 5-I, J-6. Whipping-stitch thread, cotton, 2-ply, untwisted; each single, S-twist.

Edge finishes: selvage, simple, little congestion. Whipping-stitch center seam joining the two breadths catches wefts at approximately ½-in. intervals. Needleknitting along the outer edge of both pieces, 2-loop base. Total width (diameter) of the needleknitting is ¼ in.; each loop of construction produced a knitted bar of ⅛ in. The direction of needleknitting is reversed on the two outer edges; the worker embroidered up one edge; turned the cloth, and worked down the other.

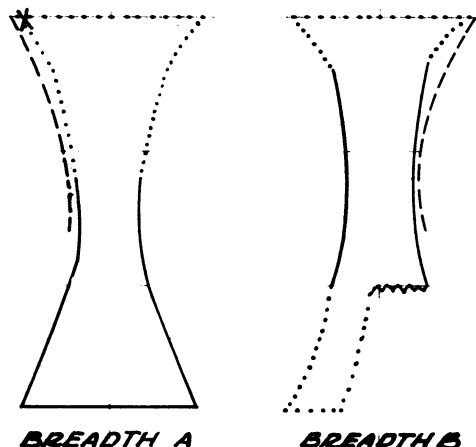
Color: wool of the needleknitted edge is gypsy red or Harvard crimson (Maerz and Paul 5-I, J-6).

UC 16-7197 (pl. 11,b).

Woven of brown and white cotton, the check of this breechcloth presents a little more prepossessing appearance than many of the other Hungara specimens. Although the two breadths do not match in the weft stripings along the longitudinal seam, nevertheless the warp setup and wefting of the two shaped pieces were intended to be the same. The warp, as drawn-in, alternates 8 brown yarns with 8 white. The wefting -- not nearly as accurate by count -- is also alternately brown and white. In the formation of equal checks, measuring by the eye was apparently considered more accurate than counting the weft shots. The brown and white checking of this specimen made positive the analysis of shaping by drawing in the wefts and subsequently releasing the tension with no addition or deletion of warps. Counts were made along the center brown warp stripe at 4-inch intervals the length

¹⁵O'Neale, 1934.

UC 16-7197 (pl. 11,b)
Dashed line indicates needleknitting. Dotted
line indicates estimated measurements.



of Breadth B. The repeated count of the brown and white warp stripes in a 1-inch square attested the continuation of all warps. The summary of analysis of this specimen (tabulation of warp stripes) contains the variation. The same tabulation shows the variation in number of weft shots of each color needed to make even checking. It will be noted that, since the brown yarns were heavier than the white yarns, it took fewer brown than white to make a square.

Needleknitting, set up on two loops, embellishes the first 16 inches of the outer edges of both breadths. This is the same loop setup as in specimen UC 16-7196. However, in this textile the stitching was begun at the loomstring ends of each breadth -- thus there is no definite outer side as there is in the previous specimen (UC 16-7196); rather, in this cloth, the long bars of the reverse side of the stitch show plainly on opposite sides of the two edges. The border is very tightly executed, though not as carefully as in the preceding specimen. The color most nearly matches Maerz and Paul 5-I, J-6; it appears the same hue (and dye ?) as that of the preceding specimen.

Summary of analysis:

Condition: Breadth A, complete. Breadth B, fragmentary, though the presence of a small section of the second loomstring permits a total length measurement.

Dimensions: Breadth A, total length 29 in.

Measurement taken at	Width (in in.)	Thread count (per sq. in.)	Indicated total warp setup
Loomstring 1	knot in corner	32 x 52	
4 in.	8 $\frac{1}{4}$	46 x 42	380
8 in.	hole pre-vents measurement		
12 in.	5	68 x 40	340
16 in.	4 $\frac{1}{2}$	79 x 44	356
20 in.	6	56 x 36	336
24 in.	8 $\frac{1}{4}$	43 x 41	376
Loomstring 2	13	32 x 46	416

Warp setup at Loomstring 2 in 1 in.: 8 brown, 8 white, 8 brown, 8 white yarns. Wefts at Loomstring 2 in 1 in.: 7 white, 8 brown, 6 white, 8 brown, 8 white, 9 brown yarns.

Breadth B, total length 29 $\frac{1}{2}$ in.

Measurement taken at	Width (in in.)	Thread count (per sq. in.)	Indicated total warp setup
Loomstring 1	incomplete	36 x 36	
4 in.	7	49 x 34	343
8 in.	5 $\frac{3}{4}$	59 x 33	349
12 in.	5	68 x 26	340
16 in.	5 $\frac{1}{2}$	62 x 30	341
20 in.	7	49 x 39	343
24 in.	incomplete		
Loomstring 2	incomplete		

Weave: plain.

Setup of warp stripes in 1-in. square made at 4-in. intervals along the central axis of Breadth B:

At Loomstring 1	10 brown	8 white	8 b	8 w	2 b
4 in.	10 b	8 w	8 b	8 w	10 b 5 w
8 in.	10 b	8 w	8 b	8 w	10 b 10 w 5 b
12 in.	10 b	8 w	8 b	8 w	10 b 10 w 8 b 6 w
16 in.	10 b	8 w	8 b	8 w	10 b 10 w 8 b
20 in.	10 b	8 w	8 b	8 w	10 b 5 w
24 in.	incomplete				
Loomstring 2	incomplete				

Weft stripes in 1-in. square (same as above) made at 4-in. intervals along the central axis of Breadth B:

At Loomstring 1	7 brown	11 w	6 b	8 w	4 b
4 in.	8 white	8 b	8 w	7 b	3 w
8 in.	8 b	7 w	7 b	7 w	4 b
12 in.	5 b	6 w	6 b	5 w	4 b
16 in.	8 w	6 b	8 w	6 b	2 w
20 in.	9 w	8 b	8 w	7 b	7 w
24 in.	incomplete				
Loomstring 2	incomplete				

The obvious variation in number of weft shots of each color shows what has been noted ethnologically: that primitive weavers more frequently depend on the eye for evenness of design than on counting the working elements.¹⁶

Yarns: warp, brown cotton, single ply, S-twist, hard to crepe, size No. 80 sewing thread; white cotton, single-ply, S-twist, hard to crepe, size No. 100 sewing thread. Weft, brown cotton, single-ply, Z-twist, hard to crepe, size No. 80 sewing thread; white cotton, single-ply, S-twist, hard to crepe, size No. 100 sewing thread. Note here that the white cotton yarns are finer than the brown. Loomstring, white cotton, 8-ply, Z-twist; each single, S-twist. Whipping-stitch yarn, 2-ply, Z-twist, one single brown cotton, one white, each S-twisted. Needleknitting yarn, wool (?), 2-ply, S-twist, loose; each single, untwisted or very loosely twisted. Color, Maerz and Paul 5-I, J-6.

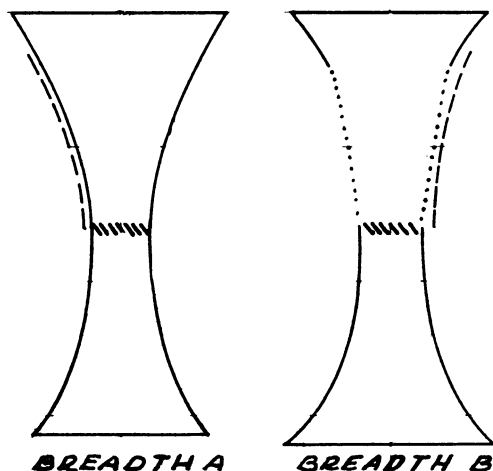
Edge finishes: selvage, simple, little congestion. Whipping-stitch center seam joining the two breadths. Outer edges of front half of both

¹⁶O'Neale, 1945, p. 80.

breadths needleknitted on a 2-loop foundation; diameter or border $\frac{1}{8}$ in. Knot at corner of Loomstring 1, Breadth A, outside corner; simple overhand knot tied of itself.

Join: not visible in either breadth. Thread counts show no irregularity which might be interpreted as a join.

UC 16-7198 (pl. 8,c; pl. 10,b). Dashed line indicates needleknitting. Dotted line indicates estimated measurements. Warp lock in center.



The second breechcloth with a warp lock over a key weft is this cloth from Hungara. Like the preceding specimen (UC 4-4122c), the opposing warps do not interlock; i.e., removal of the key weft would separate the two breadths into two separate webs. The fineness of detail in the construction of this piece indicates the care the weaver lavished on it: (1) the fineness of the warp and weft yarns; (2) the warp locking of the brown and white warp yarns (pl. 8,c); (3) the construction and use of matching loomstrings at each end of the breadths; (4) the matching also of the whipping-stitch seam, which is done with a brown thread on the front section, changed to a white for the rear section; (5) the nicely executed needleknitting in two colors along the outer edges of the front of both breadths.

The presence of the join in both the white and brown sections of Breadth A near the loomstrings (pl. 10,b) shows the opposite weaving procedure from that used for the Chincha warp-locked cloth (UC 4-4122c). On the Hungara warp setup, the weaver shot through approximately an inch-wide heading strip at the loomstrings, then reversed the loom to weave up from the warp lock (which, in the white section of Breadth B only, has 2 picks of 2-ply yarn next to the key weft). The brown and white sections of this cloth must be considered from the weaver's standpoint as two separate webs, since the holding key weft presents as rigid a warp holder as the loomstrings. The technique involved in this cloth is therefore one of release of tension rather than tightening the weft hold on the warps. This is in contrast to specimen UC 16-7193 from Hungara, in which the join is closest to the narrow end, and in which the weaving operation involved tightening of weft throws. It is extremely difficult to maintain an even release of tension;

an appreciation of this fact makes it easier to understand the great unevenness of warp and weft spacing in the entire textile.

The needleknitted border, like the others, is based on a 2-loop foundation. Like that of specimen UC 16-7197, this border has no definite outside and inside. Stitching was begun at the warp lock and proceeded to within 3 inches of the loomstring of both breadths. The reddish-purple color is the same as the preceding specimens (UC 16-7196 and UC 16-7197) (Maerz and Paul 5-I, J-6); the black, while like that of all Peruvian dyed specimens, is not a true black; it is nevertheless without the range of Maerz and Paul's darkest colors. The alternation of the colors in the embroidery is accomplished by carrying, underneath the dominant stitching, the thread of the recessive color; it acts also, therefore, as a supplementary core, although the diameter of this border is no greater than preceding ones ($\frac{1}{8}$ in.). The repetition of the colors along the edge presents an evenness of color variation in accordance with the usual repetitive formal rhythm of Peruvian embroidery.¹⁷

Summary of analysis:

Condition: complete, two breadths.

Dimensions: Breadth A, total length $31\frac{1}{2}$ in.

<u>Measurement taken at</u>	<u>Width (in in.)</u>	<u>Thread count (per sq. in.)</u>	<u>Indicated total warp setup</u>
Loomstring 1	$15\frac{1}{2}$	27 x 40	418
4 in.	$11\frac{1}{2}$	44 x 34	506
8 in.	8	54 x 34	432
12 in.	$5\frac{1}{2}$	84 x 34	462
16 in.			
(warp lock)	$4\frac{1}{2}$	88 brown x 30	396
		92 white x 30	414
20 in.	$4\frac{3}{4}$	88 x 34	418
24 in.	6	68 x 40	408
28 in.	$8\frac{1}{2}$	42 x 42	357
Loomstring 2	15	36 x 46	540 ¹⁸

Breadth B, total length $32\frac{1}{4}$ in.

<u>Measurement taken at</u>	<u>Width (in in.)</u>	<u>Thread count (per sq. in.)</u>	<u>Indicated total warp setup</u>
Loomstring 1	$14\frac{1}{2}$ (est.)	31 x 48	
4 in.	$9\frac{1}{4}$	no count taken because of holes	
8 in.		no measurement possible	
12 in.		no measurement possible	
16 in.			
(warp lock)	$4\frac{3}{4}$	92 brown x 32	437
		96 white x 36	456
20 in.	$4\frac{1}{2}$	76 x 48	342
24 in.	6	66 x 36	396
28 in.	$8\frac{3}{4}$	45 x 38	393
Loomstring 2	15	29 x 51	435

¹⁷O'Neale, 1934, p. 406.

¹⁸The discrepancy of total warp indicated here may be due to the pulling of the loomstring to its maximum width by the analyst; it may not have been held at so great a tension on the loom.

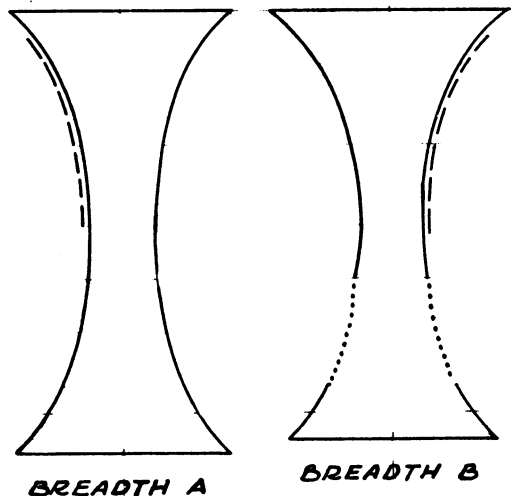
Weave: plain.

Yarns: warp, brown and white cotton, single-ply, S-twist, very hard to crepe. Size of brown, No. 100 sewing thread; white between No. 80 and No. 100 sewing thread. White generally larger than brown. Weft, same as warp. Loomstrings, front half of Breadths A and B (Loomstring 1), brown cotton, 6-ply, Z-twist, medium; Loomstring 2, white cotton, 6-ply, Z-twist. Whipping-stitch yarn, brown cotton, 3-ply, loosely twisted; white cotton, 3-ply. Key weft, white cotton, 6-ply, Z-twist. Needleknitting yarn, wool (?), 2-ply, S-twist, loose; color, crimson, Maerz and Paul 5-I, J-6; black.

Edge finishes: selvage, simple, no congestion. Loomstrings, 3 shots at each end of each breadth. Whipping-stitch center seam joining the two breadths made with brown cotton thread at the front end, knotted at the warp lock. Here a white cotton thread begins and completes the seam. The threads catch every 2 to 3 warps and are spaced every 6 to 8 wefts (pl. 8,c). Needleknitting along the outer brown section edges of Breadths A and B, beginning at the warp lock and extending to within 3 in. of Loomstring 1. Rhythmical alternation of crimson and black yarns in following sequence of stitches (cr = crimson; b = black); 10 cr, 2 b, 2 cr, 2 b, 2 cr, 2 b, 2 cr, 2 b, 2 cr, 2 b; repeat sequence beginning 10 cr.

Join: very evident in Breadth A; beginning in brown section 1 in. from Loomstring 1 and extending for approximately 5 in.; in white section, about 1 in. from Loomstring 2 and extending for 3 1/2 in. Breadth B, brown section, approximately same placement as in Breadth A; not as evident in the white section as in Breadth A, but present in the same position.

UC 16-7199 (pl. 8,d; pl. 11,c). Dashed lines indicate needleknitting. Dotted lines indicate estimated measurements.



This two-breadth plain cotton breechcloth is ornamented with needleknitting on a 3-loop foundation in un-

dyed (?) wool along the outer edges of the front section. The cloth was originally a rose color (Maerz and Paul, 5-B, C-10). The weaving, done with fine creped yarns, makes a fine textile; closer analysis revealed many mistakes in shedding, due no doubt to the difficulty of working with over-twisted yarns; and thread counts showed unequal spacing of warps. The join too is very visible in both breadths. Longitudinal wrinkles, along the outer edges particularly, resulted from the breechcloth's being worn in its single thickness; this would also be indicated by the presence of needleknitting along the outer edges only.

Summary of analysis:

Condition: complete, worn, two breadths.

Dimensions: Breadth A, total length 33 in.

<u>Measurement taken at</u>	<u>Width (in in.)</u>	<u>Thread count (per sq. in.)</u>	<u>Indicated total warp setup</u>
Loomstring 1	16 1/2	23 x 53	379
4 in.	10	40 x 40	400
8 in.	7 1/4	43 x 36	312
12 in.	5 3/4	56 x 32	322
16 in.	5 1/4	66 x 31	347
20 in.	5 1/4	72 x 32	378
24 in.	6 1/2	61 x 32	396
28 in.	9	32 x 33	288
32 in.	14 1/4	21 x 43	299
Loomstring 2	15 1/2	21 x 43	325

Breadth B, total length 32 in.

<u>Measurement taken at</u>	<u>Width (in in.)</u>	<u>Thread count (per sq. in.)</u>	<u>Indicated total warp setup</u>
Loomstring 1	17 1/2	26 x 34	455
4 in.	10 1/2	47 x 34	493
8 in.	7	48 x 31	336
12 in.	5 1/4	73 x 29	383
16 in.	5 1/4	76 x 30	399
20 in.	5 1/2	70 x 28	385
24 in.	64 x 28	..
28 in.	9 1/2	45 x 32	427
Loomstring 2	15 1/4	28 x 38	427

Weave: plain.

Yarns: warp, cotton, single-ply, S-twist, very hard to crepe, size around No. 100 sewing thread. Weft, same. Both rose color (Maerz and Paul, 5-B, C-10). Loomstring, cotton, 4-ply, Z-twist, medium; each single, S-twist. Whipping-stitch yarn, double thread, untwisted, cotton. Needleknitting yarn, wool, 2-ply, S-twist, loose. Color, Maerz and Paul, 11- or 12-G-6.

Edge finishes: selvage, plain, slight congestion. Loomstring, 3 shots at each end of each breadth. Whipping-stitch center seam which catches every 1 to 2 warps and is spaced every 2 wefts; very fine workmanship (pl. 8,d). Needleknitting along outer edges of front sections beginning in Breadth A, 2 1/4 in. from Loomstring 1 and extending for 15 1/4 in. It is complete; both ends are finished. In Breadth B, the needleknitting begins

$2\frac{1}{4}$ in. from the first loomstring and extends for $16\frac{3}{4}$ in. Needleknitting is based on a 3-loop foundation, which gives the edging a finished appearance on both sides and the edge, unlike the 2-loop, which makes a definite outer and inner side of the embroidery.

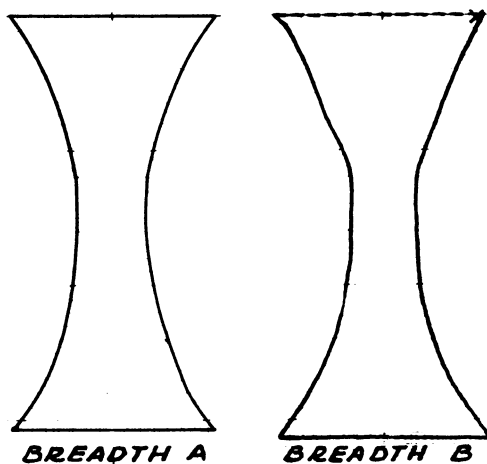
Join: visible in Breadth A beginning approximately $1\frac{1}{2}$ in. from Loomstring 1 and extending for about 6 in.; the poor spacing of the warps and small number of wefts in relation to warps, are obvious. The equivalent area in Breadth B, most noticeable around the 8-in. mark, also exhibits the join.

UC 16-7201 (pl. 10,f).

No detailed analysis of this piece was made. The entire breechcloth is knotted through the center section: a simple overhand knot was tied, the cloth reversed, and another simple overhand tied. For purposes of examination the cloth was spread out only enough to show its shaping and its two-breadth construction. It was considered that, because of its extremely worn condition, an analysis would add little or nothing to the discussion of shaped breechcloths. The cloth is dyed a deep brown (Maerz and Paul 56-J-7). The warp and weft are fine, hard-twisted cotton, like those of the majority of the specimens; single-ply, S-twist.

This is the only one, of many such knotted cloths, which Dr. McCown rescued from the spoil heap. Much of the store consisted of groups of 4 or 5 cloths knotted in the middle. I feel that this knotting, which embraces the whole of this textile, is essentially the same in nature and meaning (possible killing?) as the smaller knots tying off portions of the other textiles.

UC 16-7202 (pl. 11,d). Dotted line indicates estimated measurement.



The brown and white checking of this textile has a pleasing effect. Because of the shaping, its squares of gingham have lost their true squareness and have assumed the shape of one-half of the textile length. Both breadths were set up with the same warp striping and in both of them the center stripe, numerically, was off-center by measurement, the deviation being the breadth of that stripe. In addition, the use of narrow weft stripings near both loomstrings was not uniformly carried out in the two breadths. In Breadth A, there are 8 picks

of 2-brown-weft stripings from Loomstring 1; in Breadth B, there are 11. This error in wefting is particularly visible along the whipped seam; it was definitely an error and not a corrective measure. In Breadth A similarly, there are 10 shots of 2-brown-weft stripings from Loomstring 2 as opposed to 11 in Breadth B.

Neither breadth shows the join as visibly as do the plainer cloths. More care was certainly expended in the weaving of this last section. However, the slightly looser placement of the wefts in the section approximately 2 inches from Loomstring 2 of Breadth A (note in thread count at the 28-in. mark) places the join in this area. The placement occurs in Breadth B, in the area 1 to 2 inches from Loomstring 2. It is possible that the striping aided the weaver in keeping even warp spacing; certainly the counts along the central axis show great regularity.

Summary of analysis:

Condition: complete, two breadths.

Dimensions: Breadth A, total length $30\frac{3}{4}$ in.

Measurement taken at	Width (in in.)	Thread count (per sq. in.)	Indicated total warp setup
Loomstring 1	ca. 15	22 x 51	...
4 in.	$10\frac{1}{2}$	30 x 44	315
8 in.	$7\frac{1}{4}$	44 x 39	318
12 in.	$5\frac{1}{2}$	55 x 40	303
16 in.	5	70 x 36	350
20 in.	6	61 x 30	366
24 in.	$7\frac{3}{4}$	40 x 39	310
28 in.	11	30 x 39	330
Loomstring 2	$15\frac{1}{2}$	23 x 75	356

Breadth B, total length $31\frac{1}{4}$ in.

Measurement taken at	Width (in in.)	Thread count (per sq. in.)	Indicated total warp setup
Loomstring 1	knotted		
1 in.	$14\frac{1}{4}$	22 x 38	313
4 in.	11	30 x 43	330
8 in.	8	40 x 37	320
12 in.	$5\frac{1}{2}$	57 x 38	313
16 in.	$4\frac{3}{4}$	64 x 35	304
20 in.	$5\frac{1}{2}$	60 x 29	330
24 in.	$7\frac{1}{2}$	43 x 37	323
28 in.	11	30 x 32	330
Loomstring 2	$15\frac{1}{2}$	24 x 34	372

Weave: plain. Warp setup on both breadths is of 25 brown stripes alternated with 26 white stripes. Warp and weft counts were made along the center brown stripe, numerically, which at Loomstring 1 was set up $6\frac{1}{4}$ in. from the outer edge; thread counts listed below in 1-in. squares.

Color counts along the same warp stripe:

Breadth A.

At Loomstring 1	6 brown	10 white	6 b
4 in.	6 b	10 w	6 b 8 w
8 in.	6 b	10 w	6 b 7 w 6 b 9 w
12 in.	6 b	10 w	6 b 8 w 6 b 8 w 5 b 6 w
16 in.	6 b	10 w	6 b 8 w 6 b 8 w 6 b 8 w 6 b 6 w

At 20 in.	6 brown	10 white	6 b 8 w	6 b 8 w	6 b 8 w	3 b
24 in.	6 b	10 w	6 b 8 w	6 b 4 w		
28 in.	6 b	10 w	6 b 8 w			
Loomstring 2	6 b	10 w	6 b 1 w			

Color counts of weft stripings substantiate the statement already made that the weavers of checked materials were inclined to gauge the evenness of their squares more by the eye than by count of shots.

Colors along the same warp stripe:

Breadth B.

At 1 in.	6 brown	8 white	6 b 2 w
4 in.	6 b	8 w	6 b 8 w 2 b
8 in.	6 b	8 w	6 b 8 w 6 b 6 w
12 in.	6 b	8 w	6 b 8 w 6 b 8 w 6 b 8 w 1 b
16 in.	6 b	8 w	6 b 8 w 6 b 8 w 6 b 8 w 6 b 2 w
20 in.	6 b	8 w	6 b 8 w 6 b 8 w 6 b 8 w 4 b
24 in.	6 b	8 w	6 b 8 w 6 b 8 w 6 b 8 w 1 b
28 in.	6 b	8 w	6 b 8 w 2 b
Loomstring 2	6 b	8 w	6 b 4 w

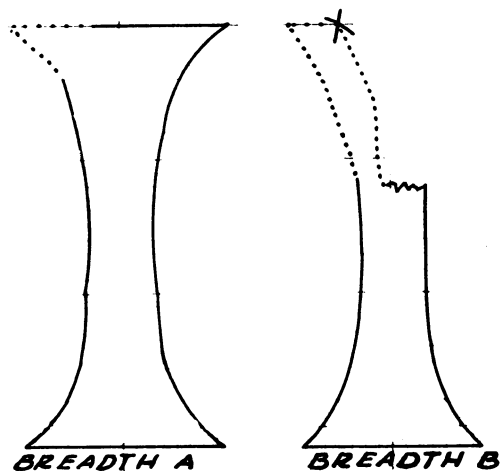
Yarns: warp, brown and white cotton, single-ply, S-twist, hard to crepe. Weft, same. Loomstrings, white cotton, 6-ply, Z-twist, loose; each single, S-twist, same as warp and weft yarns. Whipping-stitch yarn, white cotton, 2-ply, Z-twist, loose; each single, same as warp and weft yarns.

Edge finishes: selvage, simple, congested so that the cloths are inclined to roll along the edges. Loomstring, 3 shots at each end of each breadth. Whipping stitch catches every 2 to 4 warps and is spaced every 6 to 10 wefts.

Join: Breadth A, 2 in. from Loomstring 2, narrow strip. Breadth B, 1½ to 2 in. from Loomstring 2, narrow strip. Join in both breadths very neatly accomplished.

Knot: corner of Breadth B, Loomstring 1 tied off with strip of material very similar to self.

UC 16-7204 (pl. 11, e). Dotted line indicates estimated measurements.



The brown and white checking of this breechcloth is almost identical with that of specimen UC 16-7202. Breadth A of the cloth is complete, though worn, but Breadth B lacks most of the first loomstring and the corner closest to the whipping seam has been tied off

with a knot formed by a short strand of four-unit round braid. The knot was obviously put in when the textile was ready for discard (see diagram). It could have no function when the breechcloth was in use. This is one of the few textiles in which the selection of a front and rear section was purely arbitrary. There is no clear evidence to indicate how the cloth was worn. The join in this breechcloth is invisible, which attests a very careful weaver.

Summary of analysis:

Condition: Breadth A, complete; Breadth B, fragmentary.

Dimensions: Breadth A, total length 31¼ in.

<u>Measurement taken at</u>	<u>Width (in in.)</u>	<u>Thread count (per sq. in.)</u>	<u>Indicated total warp setup</u>
Loomstring 1		22 x 51	...
4 in.	8½	42 x 41	357
8 in.	6¼	68 x 46	425
12 in.	5¼	66 x 50	346
16 in.	5¼	62 x 40	325
20 in.	5¼	58 x 28	319
24 in.	5¼	50 x 38	288
28 in.	8¼	34 x 40	281
Loomstring 2	14½	30 x 42	435

Breadth B, total length about 31½ in.

<u>Measurement taken at</u>	<u>Width (in in.)</u>	<u>Thread count</u>
Loomstring 1	incomplete	no thread counts taken because of poor condition of cloth
4 in.	incomplete	
8 in.	incomplete	
12 in.	5	
16 in.	5	
20 in.	5	
24 in.	5¾	
28 in.	8	
Loomstring 2	13½	

Weave: plain. Brown and white stripings set up with alternating 6 brown and 6 white warp threads. Weft stripings show much more inaccurate counting, ranging from 3 to 7 yarns per stripe.

Yarns: warp, brown and white cotton, single-ply, S-twist, very hard to crepe; size No. 80 sewing thread. Weft, same. Loomstrings, white cotton, 6-ply, Z-twist, hard. Whipping thread, white cotton, 2-ply. Knot tying cord, 4-strand round braid, each component made of 3 single threads of cotton; the braid is extremely even; good craftsmanship.

Edge finishes: selvage, simple, little congestion. Loomstrings, 3 shots at each end of each breadth. Whipping-stitch center seam joining Breadths A and B catches every 3 to 6 warps and is spaced about every 6 wefts. Not very evenly done.

Join: not evident.

Knot: in corner of Breadth B; tied with a short length of 4-strand round braid.

UC 16-7205 (pl. 11 f)

This fragmentary piece is the only plaid in the collection. The use of brown and white warp and weft in combinations of narrow and wide stripes is very attractive. The setup is, within itself, quite complicated; it is small wonder that the two breadths are not exactly the same and that the whipped seam shows this lack of symmetry. Indeed, the counting of the number of stripes themselves was not accurate. Thus the fourth band of narrow stripes from the loomstring has 17 stripes in Breadth A and 15 in B.

The join is plainly visible, beginning about 1 inch from the loomstring in Breadth A and extending for $1\frac{1}{2}$ inches. The wefts are very poorly spaced in this area and the warps show corresponding gaps. Breadth B, where the join occurs in the same relative position, has the same poor spacing.

Summary of analysis:

Condition: fragmentary, both breadths.

Dimensions: Breadth A, fragmentary length 16 in. Width measurements not taken because of fragmentary length of piece of knot in corner of loomstring.

Breadth B, fragmentary length $13\frac{3}{4}$ in.

<u>Measurement taken at</u>	<u>Width (in in.)</u>	<u>Thread count (per sq. in.)</u>	<u>Indicated total warp setup</u>
Loomstring 1		29 x 47	...
4 in.	11	41 x 42	451
8 in.	8	59 x 38	472
12 in.	$6\frac{1}{2}$	67 x 40	436

Weave: plain. The pattern of the plaid in brown and white cotton, as set up in the warping (taken across the 8-in. width) is as follows:

First pattern: 2 white, 2 brown (warps), 22 times; 12 w, 14 b, 12 w, 12 b, 12 w, 14 b.

Second pattern: 2 w, 2 b, 21 times; 11 w, 12 b, 12 w, 10 b, 12 w, 14 b.

Third pattern: 2 w, 2 b, 17 times; 13 w, 12 b, 13 w, 12 b, 14 w, 12 b.

Fourth pattern: 2 w, 2 b, 15 times.

Weft patterning was taken for a single unit beginning with the wide white weft stripe at $7\frac{1}{2}$ in. from the loomstring. The unit consists of 3 in. of patterning before it repeats; however, this is not an actual repeat, for the number of weft shots was decreased as the material became narrower in order to keep the plaid more even.

Weft pattern: 8 w, 6 b, 8 w, 8 b, 8 w, 8 b; 2 w, 2 b, 19 times.

The warp and weft patterning of the two breadths is essentially the same.

Yarns: warp, brown and white cotton, single-ply, S-twist, very hard to crepe; size No. 80 to 100 sewing thread. Weft, same. Loomstring, white cotton, 6-ply, Z-twist, loose to medium; each single, same as warp and weft. Whipping-stitch yarn, single-ply brown and white yarns, untwisted.

Edge finishes: selvage, simple, little congestion. Loomstrings, 3 picks for each breadth. Whipping-stitch center seam catches approximately 4 warps and is spaced 4 to 6 wefts.

Join: evident in both breadths. Breadth A, beginning 1 in. from Loomstring 1 and extending for $1\frac{1}{2}$ in.; Breadth B, beginning 1 in. from the loomstring and extending for about 2 in.

Knots: in Breadth A, outer corner of loomstring tied off with a 2-ply cotton cord, S-twisted, very hard and very even. In Breadth B, outer corner of loomstring tied off with what appears to be a piece of its own plaid.

LA PUNTILLA

Specimens in this collection were brought from La Puntilla¹⁹ in August, 1931, to the Museo de Antropología y Investigaciones Prehistóricas in Magdalena Vieja. Museum notes indicate that they are "objetos de la cultura Chíncha" (this label covers specimens MAP 8719 to MAP 8766).

The two breechcloths in this series have an entirely different shape than that of any of the preceding specimens. If they are indeed of the Chíncha culture (and the inventory of these objects leaves one in doubt of their exact provenience), they certainly offer a variation from the Chíncha style previously discussed.

The shape itself is extraordinary: although the length of the webs is as great as that of most of the preceding cloths (29 in. and 32 in.), the only technique of shaping used is increase of weft tension. The front end in both cloths is decorated with woolen embroidery across the loomstring and down each side. Although the loomstring widths of these specimens are greater than those of any of the single breadths heretofore discussed, the cloths lack the fullness at the front, since they are single breadths only. The depth of the embroidered edges (11 in. and 13 in.) may indicate a considerable overhang in the front. However, the ties at the corners of this wide end of specimen MAP 8739 suggest that this breechcloth may have been worn by securing the front around the waist by means of the ties, and then passing the cloth between the legs, lapping the narrow end over the tie in back.

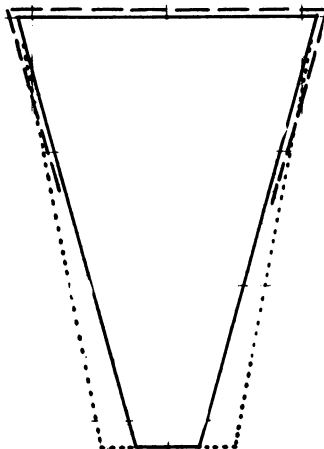
The two corners in the narrow section of both specimens from La Puntilla have been folded in to meet and have been sewn with whipping and running stitches. The field notes of Dr. O'Neale do not clearly indicate whether the $4\frac{1}{2}$ inch and $2\frac{3}{4}$ inch lower measurements of the cloths are the woven width (i.e., Loomstring 2) or the width after the folding and sewing were done. The total warp figures from the two specimens almost clearly indicate that Dr. O'Neale's were of the width after the folding and sewing since she definitely states that shaping was by drawing in and not by deleting warps. Thus it would appear that the sewing together of the lower corners of these two breechcloths was to make the narrow rear end even more narrow. The purpose of this is not understandable; the fact that the cloth is, at the narrow section, already warp face, may show that the weaver was unable to draw in her wefts to the extremely narrow width she desired; sewing was the final resort. The bulk caused by the folding must certainly have caused discomfort: two thicknesses of

¹⁹I was unable to locate La Puntilla on any available site map.

a warp-face material would hardly be pliable. One is almost forced to the conclusion that the reason for this folding was the element of "style." Only a study of the preceding breechcloth type in La Puntilla might reveal the need or the desirability of the stitching of these breechcloths. In the diagrams of the two specimens I have dotted in the greater width as the probable woven width. Dr. O'Neale's original measurements have been used for the heavy line drawings.

The analysis of this group of textiles is based solely on Dr. O'Neale's notes.

MAP 8738 (fig. 1). Dashed line indicates embroidery. Dotted line indicates probable woven width.



Summary of analysis:

Condition: complete, single breadth.
Dimensions: total length, 32 in.

<u>Measurement taken at</u>	<u>Width (in in.)</u>	<u>Thread count (per sq. in.)</u>	<u>Indicated total warp setup</u>
Loomstring 1	22	24 x 24	528
Loomstring 2	4½ (9 ?)	36 x 16	...
		48 x 12	216 (432 ?)

Weave: plain, warp face in narrow section.

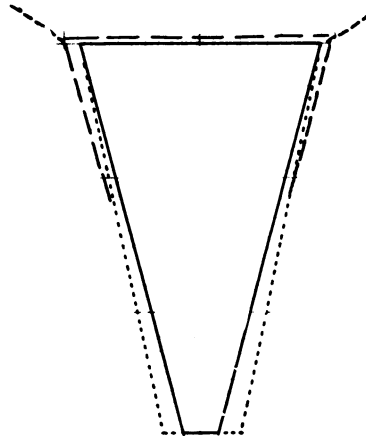
Yarns: warp, white cotton, 2-ply, hard twist.

Weft, same. Embroidery yarn, wool, 2-ply, medium twist. Colors red, orange-yellow, and dark brown.

Edge finishes: lower corners folded together and sewn with whipping and running stitches.

Across the top edge and 13 in. down each side a decorative finish composed of wool and cotton yarns. Wools are couched down under the bars of a blanket-stitch edge binding.

MAP 8739. Ties at upper corners. Dashed line indicates embroidery. Dotted line indicates probable woven width.



Summary of analysis:

Condition: complete, single breadth.
Dimensions: total length 29 in.

<u>Measurement taken at</u>	<u>Width (in in.)</u>	<u>Thread count (per sq. in.)</u>	<u>Indicated total warp setup</u>
Loomstring 1	18	24 x 7 (14)	432
Middle . . .		36 x 7 (14)	...
Loomstring 2	2¾ (5½ ?)	64 x 16	176 (352 ?)

Weave: semibasket; plain, warp face. Wefts used in pairs until weaving had reached 5 in. from narrowest loomstring where singles were inserted. [This probably indicates area of the joint.]

Yarns: warp, white cotton, 2-ply, hard twist. Weft, same. Embroidery yarn, cotton, 3-ply.

Edge finishes: across front end and for 11 in. down each side, a "combination of blanket stitch and plaiting."²⁰

Ties: 3-ply cord from upper corners (one of these cords the loomstring ?) and the other pulled through to median point (?), twisted together. Tying cords (?).

SUMMARY AND CONCLUSIONS

Summary of analyses (see also figs. 1, 2; tables 1, 2):

Single-breadth specimens: 4 (UC 4-4122c, UC 16-7193, MAP 8738, MAP 8739).

Two-breadth specimens: 18 (UC 4-3883c; MHN: 2608, 2609, 2610, 2611, 2612, 2613, 2614; UC: 16-7194, 16-7195, 16-7196, 16-7197, 16-7198, 16-7199, 16-7201, 16-7202, 16-7204, 16-7205).

Plain colored: 8 (MHN 2613, MHN 2614; UC 4-3883c; UC: 16-7194, 16-7195, 16-7196, 16-7199, 16-7201).

Checked: 4 (UC 4-4122c, front section only; UC: 16-7197, 16-7202, 16-7204).

Plaid: 1 (UC 16-7205).

Warp locked: 2 (UC 4-4122c; UC 16-7198).

Brocaded: 5 (MHN: 2608, 2609, 2610, 2611, 2612).

Needleknitted edges: 5 (UC: 16-7196, 16-7197, 16-7198, 16-7199; MAP 8739 ?).

Specimens with ties: 2 (UC 16-7193; MAP 8739 ?).

Specimens with knots: 5 (UC: 16-7197, 16-7201, 16-7202, 16-7204, 16-7205).

²⁰This quotation is taken directly from Dr. O'Neale's notes. The finish is probably needleknitting of the single-loop variety, which would certainly appear as a blanket stitch on front and back and as braiding along the edge.

TABLE 1

Breadth Measurements of Shaped Breechcloths

Site and specimen no.	Total Length (in in.)	Breadth measurements at 4-in. intervals of central length (in in.)									
		Loomstring 1	4 in.	8 in.	12 in.	16 in.	20 in.	24 in.	28 in.	32 in.	Loomstring 2
ATE											
MHN 2608 . . .	38*	22½					6½**				12½
MHN 2609 . . .	34*	?				6**					14
MHN 2610 . . .	33*	20				6½**					11
MHN 2611 . . .	34*	20½				5½**					12½
MHN 2612 . . .	?	21*				?					?
MHN 2613 . . .	33*	20	13	10	7¼	6	6	7¼	8	12	12
MHN 2614 . . .	35*	20	11	8	7	6½	6	6	6	6	8½
UHLE - D (Chincha)											
UC 4-3883c											
Breadth A . .	37	18½	13¾	10	7¾	6	5	5½	7¼	10¼	15¾
Breadth B . .	36½	19	13	9½	8	6	5¼	5¾	7½	10	17
UHLE - F (Chincha)											
UC 4-4122c . .											
	33½	18	12½	9¼	6¼	4¾	5½	7½	10		15
HUNGARA											
UC 16-7193 . .											
	15	21½	19¾	18½	17						15½
UC 16-7194											
Breadth A . .	17½ ⁵	16½	9¼	6½	5½	5					
Breadth B . .	21½	14½	8¾	6¼	5¼	4¾	5¼				
UC 16-7195											
Breadth A . .	31¼	?	8½	6½	4¼	4½	5¼	6½	9½		14½
Breadth B . .	31¼	15	8¼	6¼	4½	4	4½	6	8		12½
UC 16-7196											
Breadth A . .	8½ ⁵	?									
Breadth B . .	8½ ⁵	?									
UC 16-7197											
Breadth A . .	29	14	8¼	?	5	4½	6	8¾			13
Breadth B . .	29½	?	7	5¾	5	5½	7	?	?		?
UC 16-7198											
Breadth A . .	31½	15½	11½	8	5½	4½	4¾	6	8½		15
Breadth B . .	32¼	14½	9¼	?	?	4¾	4½	6	8¾		15
UC 16-7199											
Breadth A . .	33	16½	10	7¼	5¾	5¼	5¼	6½	9	14¼	15½
Breadth B . .	32	17½	10½	7	5¼	5¼	5½	?	9½	15¼	15¼
UC 16-7202											
Breadth A . .	30¾	15	10½	7¼	5½	5	6	7¾	11		15½
Breadth B . .	31¼	14¼	11	8	5½	4¾	5½	7½	11		15½
UC 16-7204											
Breadth A . .	31¼	?	8½	6¼	5¼	5¼	5½	5¾	8¼		14½
Breadth B . .	31½	?	?	?	5	5	5	5¾	8		13½
UC 16-7205											
Breadth A . .	16 ⁵	?	?	?	?						
Breadth B . .	13¾ ⁵	?	11	8	6½						
LA PUNTILLA											
MAP 8738	32	22									4½ (9?)
MAP 8739	29	18									2¾ (5½?)

* Measurements on these cloths are for one of two breadths.

** Narrowest width placed in central length position (see p. 159).

⁵ Fragmentary length.

TABLE 2

Thread Analyses and Ornamentation of Shaped Breechcloths

Site and specimen no.	Ply	S-twist	Z-twist	Degree of twist	Color of textile	Ornamentation
ATE						
MHN 2608	1	no information		crepe	brown	wool brocading (rose-red and maroon)
MHN 2609	1	no information		crepe	brown	wool brocading (rose-red, yellow)
MHN 2610	2	no information		crepe	white	cotton brocading (brown)
MHN 2611	1	no information		crepe	white	cotton brocading (brown)
MHN 2612	2	no information		crepe	white	blue cotton loomstrings, wool brocading (red, blue-purple)
MHN 2613	1	no information		crepe	white	blue cotton loomstrings
MHN 2614	1	no information		crepe	white	brown cotton loomstrings
CHINCHA						
UC 4-3883c	1		wa, we*	crepe	white	none
UC 4-4122c	1		wa, we	very hard to crepe	brown and white	14-16 b/10-13 w checking, warp lock
HUNGARA						
UC 16-7193	2	(singles)	wa, we	wa loose, we med.	rose-brown	whipped edge, cotton
UC 16-7194	1		wa, we	crepe	rose (5-G-1)	none
UC 16-7195	1		wa, we	crepe	rose (5-G-10)	none
UC 16-7196	1		wa, we	crepe	brown and white spun together	wool needleknitting, crimson (5-I, J-6)
UC 16-7197	1		wa, w we b weft	crepe	brown and white	8-10 b/8-10 w checking; wool needleknitting, crimson (5-I, J-6)
UC 16-7198	1		wa, we	crepe	brown and white	warp lock; wool needleknitting crimson (5-I, J-6) and black
UC 16-7199	1		wa, we	crepe	rose (5-B, C-10)	wool needleknitting, natural (11 or 12-G-6)
UC 16-7201	1		wa, we	crepe	brown (56-J-7)	none
UC 16-7202	1		wa, we	crepe	brown and white	6 b/8-10 w checking
UC 16-7204	1		wa, we	crepe	brown and white	6 b/6 w checking
UC 16-7205	1		wa, we	crepe	brown and white	plaid
LA PUNTILLA						
MAP 8738	2	no information		hard	white	wool embroidery (red, orange-yellow, dark brown)
MAP 8739	2	no information		hard	white	cotton embroidery

* wa = warp; we = weft.

The four sites represented by the shaped breechcloths analyzed for this paper are all in the division designated by Strong and Willey²¹ and Bennett²² as the Central Coastal: 7 from the Rimac Valley, 2 from Chincha Valley, 11 from Cañete Valley, and 2 from Pisco Valley (?). To these 22 shaped specimens here discussed may be added 2 represented in literature: 1 illustrated by Dr. Gösta Montell²³ and 1 illustrated in Uhle's summary of his excavations at Pachacamac (Lurin Valley).²⁴ Junius Bird writes me of 5 shaped

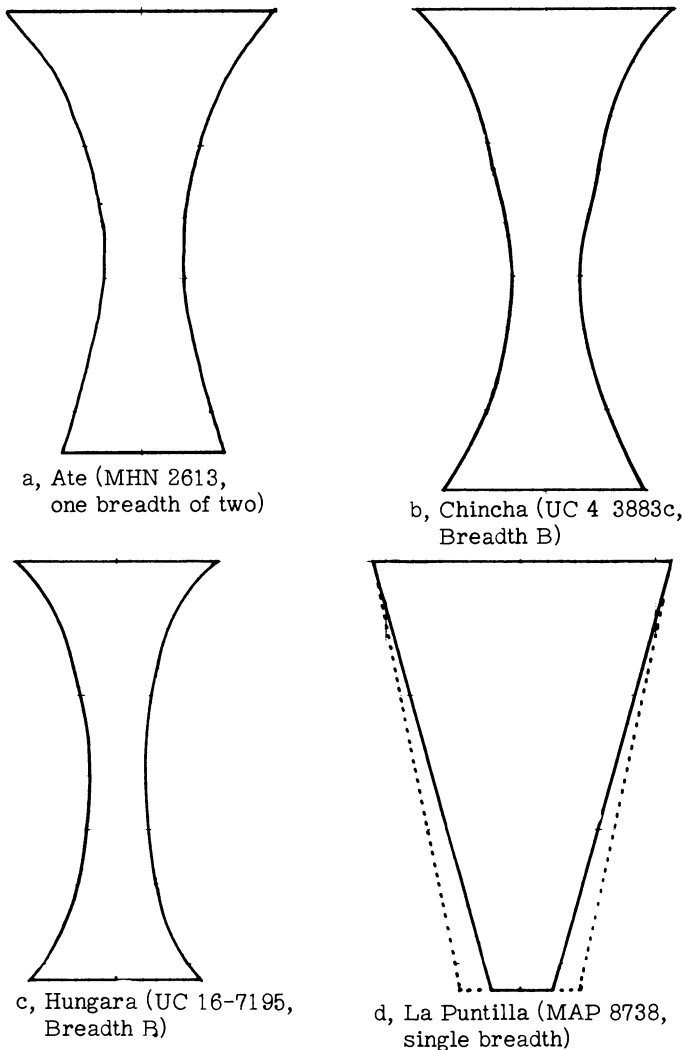


Fig. 1. Scaled diagram showing typical shapes of breechcloths from the four sites represented.

breechcloths and 3 fragments from Surco (a coastal site near Lima, towards the Lurin Valley), and Miss Joy Mahler of the American Museum of Natural History is preparing a paper on 1 complete shaped breechcloth

and 5 fragments from Pachacamac. The areal distribution of the shaped breechcloths known at this time is thus wholly confined to the coastal valley areas from the Rimac to the Pisco. Only the valleys of Mala and Chilca have produced none: since only meagre archaeological work has been done in these basins, the absence of specimens might be expected. It is also to be expected that the shaped breechcloths will prove to be a part of the late culture period in these valleys.

The chronological placement of the shaped breechcloths is equally limited. All the sites represented are late: thus the shaped breechcloths with which I am familiar are products of late cultures, probably just pre-Inca or Inca period, though almost surely not products of Inca manufacture and civilization.

Technologically also the shaped breechcloths fall into Late-period textile categories. The predominant use of cotton (all specimens) and of single-ply creped yarns (17 specimens) link these with Late-period textiles in general.²⁵ Specifically, the abundant use of cotton and the development of techniques in cotton are linked with Late Chincha and Late Chimu periods and areas; this use of cotton survived the Inca conquest.²⁶ The shaped breechcloths may perhaps be examples of newly developed processes contingent on the use of fine cotton yarns: wool yarns would almost surely not lend themselves to the shaping technique as readily as the fine cottons. Although single-ply creped cotton yarns were a product of both the northern and central coastal developments of cotton techniques, there are certain specific techniques which fit the development more closely with Chincha than with Chimu origin. One of these is the warp-locking exhibited in one Chincha Valley cloth (UC 4-4122c) and one Cañete Valley cloth (UC 16-7198): this technique is listed as a local peculiarity of the southern area²⁷ (i.e., southern section of Central Coastal division of Bennett). The method used in the shaped cloths, involving the use of a key weft with no interlocking of alternate warps, is apparently peculiar to these. Unshaped cotton cloths with interlocked brown and white warp sections, and with an interlocked brown and white striped warp section (plus weft striping to give a check) and plain brown warp, were found in Late Cañete textiles.²⁸ Late Cañete culture was shown to be nearly identical with the Late culture at Chincha; it may not be coincidence that the styles in shaping of the Chincha and Hungara specimens, while differing between the sites, are more closely related to each other than to the styles of any of the other specimens.

Needleknitting also is peculiar to the Late-period south-central valley textiles: in the shaped cloths this embroidery is employed in the Cañete Valley examples (with one Pisco Valley ?). Moreover, the repetition of color in pattern typical of Late-period textiles is manifest in the needleknitted border of the Hungara specimen (UC 16-7198) and in the Ate brocading of specimens

²¹Strong and Willey, 1943.

²²Bennett, 1948, pp. 4-5.

²³Montell, 1929, p. 142 and fig. 71B on p. 145.

²⁴Uhle, 1903, pl. 7, fig. 13; p. 38.

²⁵O'Neale and Kroeber, 1930, p. 35.

²⁶*Ibid.*; p. 48.

²⁷*Ibid.*, p. 49.

²⁸Kroeber, 1937, p. 251.

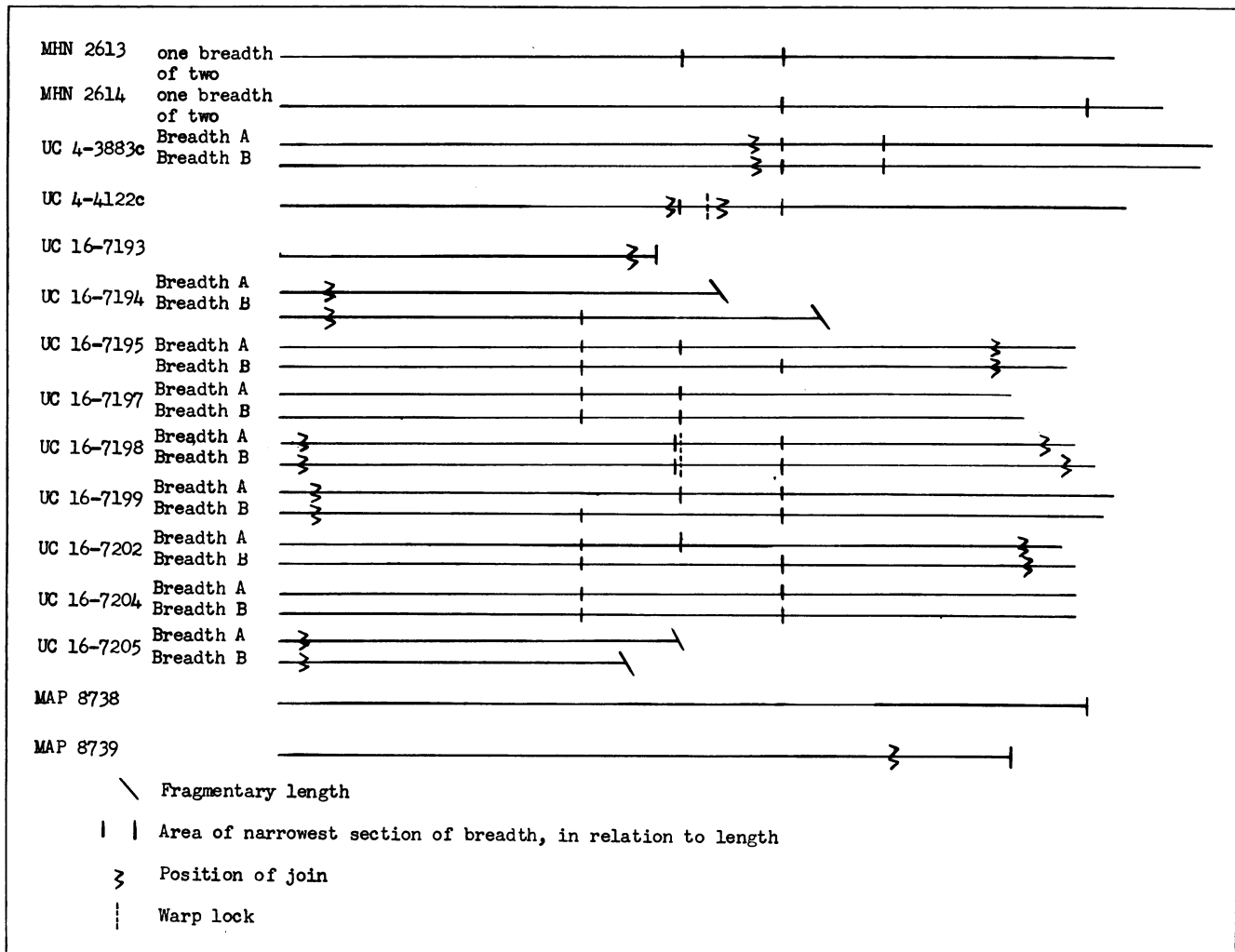


Fig. 2. Scaled diagram showing area of narrowest section of breadth in relation to length; position of join; position of warp lock.

MHN 2608, MHN 2609, and MHN 2612. In all of the Ate specimens, the use of geometric figures (MHN 2610, MHN 2612) and conventional reciprocal bird figures (MHN 2608, MHN 2609, MHN 2611) in the single-face brocade (yarn in same shed with basic weft) are typically Late period in design style and technique. Note should also be made of the two-tone yarn of specimen UC 16-7196: this rare spinning method is noted in only 2 Late Ica specimens (Ica and Nazca valleys); 3 Middle culture specimens (Lima and Ica valleys) and 4 Early culture specimens (Cañete and Nazca valleys). It again shows a limitation areally to this Central division, and an origin in the southern sector thereof.²⁹

Up to this point, the burden of analysis of the shaped cloths has been on the characteristics shared by all or nearly all of the shaped cloths. It is obvious, however, from the preceding descriptions and summaries of analysis that there are differences from valley to valley; the first and most striking is the variation in shaping

which must have made a difference in the wearing of the garments.

The two La Puntilla specimens, representative of the southernmost extension of these shaped cloths, are aberrant in the shaping itself, which is simpler than (and precedes?) the style of the Chincha, Hungara, and Ate specimens, since the only technique of shaping used is the drawing-in process (increase of weft tension). In this connection note the join in the narrow section of MAP 8739, which designates the direction of weaving. Also, the way these La Puntilla garments were worn seems to coincide more closely with the wearing of the common straight-woven cloths described by Means:³⁰ "It [the breech-clout] consisted of a strip of cloth that was secured around the waist by strings or tapes, and it was passed over the strings behind in such a way that it hung below them to some extent." The single breadth of the finished garment -- thus narrower than any of the other specimens except UC 4-4122c and

²⁹O'Neale and Kroeber, 1930, Basic Table.

³⁰Means, 1931, p. 470.

UC 16-7193 -- and the complete lack of widening for the rear section suggest that these cloths were worn in the same way. The edge needlework, which in the La Puntilla specimens alone includes the loomstring end as well as a section along the side edges, would be shown to advantage in this style of wearing. There are available no other La Puntilla specimens of breechcloths with which to compare these shaped cloths. Only the chronological and technological relation of shaped breechcloths to other Pisco Valley textile material will reveal the development of this shape and the reason for the additional narrowing of the rear flap by stitching. In the same way the use of 2-ply weaving yarns must also be related to common weaving procedure of the place and time.

It has been mentioned that the Hungara (Cañete Valley) and Chíncha (Chíncha Valley) styles of shaping are more closely allied than any others. Although the two Chíncha cloths are longer and wider than any of the Hungara specimens, the final shape is the same -- hourglass with narrowest section in approximately central position of length (fig. 2) and loomstring ends of approximately the same width (table 1). In all textiles which exhibit some decorative features on what must have been the front end (UC: 4-4122c, 16-7197, 16-7198, 16-7199) the loomstring at this end is invariably slightly wider than the loomstring at the back. With one exception (UC 16-7193) all of these specimens are of single-ply creped yarns. Both brown and white cotton were used, and checking occurs only in specimens from these two valleys; the technique of warp locking is also limited to the same region. The standardization in size of checks is noticeable: apparently after arriving at a check of pleasing size (6 to 14 b alternated with 6 to 10 w warps), the weavers were content with this setup. The only variation to this standard check is the plaid (UC 16-7205). The lack of concern over the meeting of weft stripes in the two breadths of cloth has already been noted.

Needleknitting occurs in the Hungara specimens, but not in the Chíncha. On the Hungara cloths it is used only on the outer selvage sides: the lack of ornamentation across the loomstring ends contrasts with the decoration of the La Puntilla specimens. By this late time, also, there is a lack of variety in dye colors. The rose (red to orange) samples of Hungara cloths (dyed cotton) all fall into the same color range as the dyed wool used for needleknitting. The only other colors used are the deep brown of specimen UC 16-7201 and the black wool of UC 16-7198; the natural wool of UC 16-7199 can hardly be termed a "color."

The join, that section of the web which indicates to the analyst which part was woven last, shows a standardization of the actual procedure in the Chíncha specimens, and, in the Hungara specimens, a lack of such standardization (fig. 2). Three specimens (UC 4-4122c, 4-3883c; UC 16-7193) have the join in the narrowest section, thus emulating the weaving procedure of the La Puntilla specimens; one specimen (UC 16-7198), warp locked, exhibits only the opposite method -- weaving from narrow center to wider ends, a release of weft tension; five of the remainder (UC: 16-7194, 16-7195, 16-7199, 16-7202, 16-7205) have joining strips at one of the wide ends, thus a combination of the two weaving procedures noted previously, i.e., increase of weft

tension to narrowest spot and subsequent release to the wide loomstring ends; two (UC: 16-7197, 16-7204) were so finely accomplished that the join is not visible. Apart from the fact that one method might be easier than another, the lack of standardization in the end position of the join may or may not be a criterion of cultural habit formation; the lack of standardization in the end position of the join has previously been noted in connection with contemporary weavers.³¹ In general, however, the central position of the join is probably directly correlated with the shaping process: joins are seldom in this position in straight breadths.

The relative equal width of the front and rear sections of the Chíncha and Hungara cloths, the central position of the narrowest section, and the lack of ties make the wearing of these garments obviously different from that of the La Puntilla specimens. Both front and rear probably were held in place by a waist belt over which fell at both ends the wide folds of the cloths. The front section, particularly in the embroidered edged specimens, may have overhung considerably more than the rear, though the central placement of the narrowest section argues for more equal distribution of the length. If we overlook the fact that the ornamented section, particularly of the brocaded Ate specimens would be completely lost if the garments were tied by the front corners, the lack of ties and/or wear on the front corners, assuming that perhaps the textile itself was tied, precludes such conjecture. The pulling out of the outer corners of the breechcloth can easily be attributed to the constant adjustment over a waist belt.

The Chíncha specimen of Uhle's Site D (UC 4-3883c) is the only one of the two-breadth cloths whose wear shows that it was worn double. When its thickness was doubled, it became the equivalent in size of the Chíncha single-breadth cloth (UC 4-4122c), and, therefore, about half the width of the Hungara specimens. All the Hungara specimens were gathered more fully in order to use the entire loomstring breadths in a single thickness of overhanging material. This assumption is borne out by the ornamentation of needleknitting on the outer edges only and the fold lines or wrinkling of the majority of the specimens, particularly along the outer selvage edges of the narrowest section, which I assume was placed between the legs.

In brief, a summary of Chíncha-Cañete Valley identities in the shaped cloths includes the following characteristics: (1) use of single-ply brown and white cotton, very hard to crepe-twisted warp and weft; (2) warp locking using identical method; (3) checking involving use of brown and white yarns; (4) similarity in general shape outline of individual breadths; (5) lack of ties. A summary of dissimilarities includes: (1) relative size (Chíncha greater than Hungara); (2) variation in weaving procedure as indicated by position of join; (3) embroidery, needleknitting, present only in Hungara specimens; (4) Chíncha specimens worn double thickness and one breadth to present a relatively narrow overhanging front and rear (18 to 19 in.) as opposed to Hungara cloths worn single thickness with a great fullness in front and rear (about 30 in.). As with the La Puntilla shaped cloths, more needs to be known of the relation-

³¹O'Neale, 1945, pp. 48-49.

ship with earlier breechcloths from the two valleys. The costume style of the two areas seems, from the limited number of present specimens, to have varied locally. The extremely small sampling of Chincha shaped breechcloths makes additional comments hazardous.

In all the previous discussion of Hungara cloths it is obvious that the aberrant specimen UC 16-7193 has been omitted. In its use of 2-ply yarns and in its shaping, it resembles the La Puntilla specimens. However, the small size of the garment and the presence of ties at both ends make obvious its method of wear: in this it resembles the unshaped cloth UC 16-7203 (pl. 10,e) more closely than any of the shaped cloths. Again, excavation at Hungara might reveal the true position of this technologically transitional form between the unshaped heavily constructed cloths and the finely constructed hourglass-shaped cloths. Indeed, the relationship may not be temporal: the possibilities of linkage with sex and/or class cannot be discussed here for lack of information pertinent to the exact associations of all of the shaped breechcloths.

It was thought at first glance that the tying of knots in the corners of five of the eleven Hungara cloths was perhaps functional. However, the presence of the one knot involving the whole specimen (UC 16-7201), the knot tied around the torn-off corner of the fragmentary specimen UC 16-7204, and, finally, the knot in the corner of the fragmentary plaid (UC 16-7205), which appears to be made with a fragment of its own length, convinced me that the knots served no function during the life and use of the breechcloths, but rather were tied as the cloths were discarded. The possibility of some sort of "killing" on placement in the graves, is offered as a suggestion.

There is again a definite style in the Ate specimens: here the front end, ornamented with wool or cotton brocading, is nearly twice the width of the rear end, which is totally unornamented. As with the Chincha and Cañete Valley breechcloths, and in contrast to the La Puntilla, these are all woven in two breadths joined by a whipping-stitch center seam. Both single- and 2-ply yarns were used, and again both brown and white cotton. All were spun to a crepe degree. But the Ate cloths of the Rimac Valley stand out as the only cloths with brocading. Here are no warp locks, no checking: the style of ornamentation is peculiarly its own. Single-face brocading (onlay type with brocading yarn in same shed as basic weft would ordinarily fall into this category) is common to both Late Chimú and Late Chíncha textiles.³² Dr. O'Neale felt that the prevalence of single-face brocade, which uses less decorative yarn, in the Late periods might be an indication of the weavers' inability to procure the requisite amounts of wool. This hypothesis would be partially supported by the fact that of the five brocaded Ate specimens, two have ornamental yarn of cotton alone. The absence of brocading in the decoration of the southern shaped cloths, even when the technique was known, may have significance: it makes obvious the inference that the specialization of loom-made brocading decoration in the Ate specimens is a carry-over of Chimú ornamentation to what may be a

diffused southern technique of shaping. Also present in the Ate cloths is a new color: in these northernmost shaped cloths blue is used for the first time.

From all indications of size, location of brocaded elements, and position of the narrowest section in relation to the length these shaped Ate breechcloths were worn in the same manner as the Hungara and Chíncha cloths; that is, drawn over a waist belt.

Dr. Montell illustrates one shaped breechcloth, for which he gives no definite provenience.³³ It is part of the collection of the Riksmuseum in Stockholm and is listed with material from the central portion of the coastland as pre-Inca. Its shaping and its execution in very thin cotton make it comparable to ones already discussed. Like the Ate specimens it is brocaded. Unfortunately, the drawing does not indicate whether the specimen was woven in a single breadth or in the more typical two breadths. However, its design arrangement (V-shaped, coming in to what I would assume to be a center seam), the undecorated extreme front section, and the reciprocal bird design make its resemblance to the Ate specimens as described by Dr. O'Neale unmistakable. The textile measurements taken by application of the scale to the diagram are approximately 33½ inches long; 19½ inches wide at the front end; 8¾ inches in its narrowest width and 16 inches at the rear end. The width measurements are not at all accurate, if the specimen is indeed woven in two breadths: the loomstrings of none of the two-breadth specimens can be pulled to a horizontal position simultaneously, since the shaping produced concave selvages on both sides of the breadths. Thus the central measurement of 8¾ inches is probably the only true one. At any rate, judging from the plate, the relationship of front and rear loomstring widths does not equate with the Ate cloths.

The single shaped breechcloth illustrated by Uhle³⁴ is very different in shape, weaving technique, and size from most of the specimens. Woven of wool, like the unshaped Hungara cloth (UC 16-7203, pl. 10,e), it measures in its single breadth (scale applied to figure) 18¾ inches long; 6¼ inches at the wide end; 3½ inches at the rear end. Ties at both front and rear are about 16 inches long. The cloth³⁵ is of black wool, warp face with warp stripes of red and yellow down the center (again compare with UC 16-7203). The shaping again represents only the drawing-in process: the photograph, though poor, seems to show the join at the narrow end. In all particulars this cloth represents a technologically primitive form of shaping. Like the Hungara heavy cotton cloth (UC 16-7193, pl. 10,d) it seems transitional from wool and cotton unshaped breechcloths to the beautifully executed and more ornamental fine cotton hourglass-shaped cloths. Yet, the late period dating (Uhle states Inca period) makes it more probable that the wool shaped breechcloths, while related to the fine cotton ones, are products of a culture more conversant with wool as a weaving material than with fine cottons. Its comparative crudity is undoubtedly linked with the

³³Montell, 1929, p. 142 and fig. 71B, p. 145.

³⁴Uhle, 1903, pl. 7, fig. 13.

³⁵Ibid., p. 38.

³²O'Neale and Kroeber, 1930, p. 48.

structural material. Uhle considered loincloths part of male attire only.³⁶ Miss Wardle, in correspondence, referred to a second shaped breechcloth excavated by Uhle at Pachacamac. I have no description of it.

It is noted in Montell's dissertation that in this pre-Incaic period short shirts were worn.³⁷ One would be inclined to expect this because of the ornamented breechcloths. However, the descriptions of elaborate tunics in his work far outweigh mentions of the plainer cotton ones, so that the true relationship between tunic length and the ornamented breechcloths is difficult to understand.

A survey of twenty-two shaped breechcloths is obviously sufficient to raise a great variety of questions; it is not sufficient to answer them. The relation of the breechcloths to and their development from other local textiles; the probable site, or at least valley, variations in style; their linkage with sex and/or class -- these have all been suggested. I have favored throughout a

theory of a southern origin of the shaped breechcloth: this theory cannot be proved with this narrow range of samples; or perhaps with any range of samples which arrive at museums sans chronological cultural placements. That the type is of coastal and not highland origin is almost indisputable.

One of the outstanding features of all the breechcloths is the obvious wear. These are not items woven only for show or for grave goods. All of them show a great deal of wear before they became part of the grave material; many of them are literally worn out. Like the Chincha plain-weave cloths described by Dr. O'Neale et al. in 1949 these breechcloths belong to what must have been numerically the most important class of Peruvian textiles, the every-day costume, much neglected in scientific and textile-art studies. It is unfortunate that there are no materials with which to compare them for, even as every-day cloths, they demonstrate the high degree of craftsmanship which we expect of Peruvian weavers. The fineness of the spun threads, the thread counts, the setup of warp stripes, the shaping in the process of manufacture, all show the care and time lavished on what Means designates as "the plebeian stuffs of ancient Andean weaving."

³⁶*Ibid.*, p. 85.

³⁷Montell, 1929, fig. 70, p. 143; fig. 71A, p. 145; fig. 72, p. 146.

GLOSSARY

Breadth: selvage-to-selvage width of a finished textile specimen as it comes off the loom.

Brocading: a form of superstructural technique in which supplementary yarns develop design motives by means of floats. These yarns form no essential part of the textile. In all the shaped specimens which exhibit brocading, the onlay type, with the supplementary yarn in the same shed with the basic weft is the only type used (MHN: 2608, 2609, 2610, 2611, 2612).

Check, checked: the term given to the square appearance produced on a fabric by employing a weave of two or more colors of warp and weft arranged to give an even alternating pattern. In the breechcloths which were checked, however, the shaping produced an aberration of the true squares.

Crepe twist: an extra- or over-twisting of yarn which produces a crinkled appearance in the cloth. This gives added strength to the thread but, at the same time, makes it more difficult to work with.

Drawing-in: setting up the loom with the warp threads.

Heading strip: the first weaving following the loomstring weft or wefts, at one end of the textile breadth, which regulates its end width. With the completion of the heading strip, the two-bar loom weaver reversed the loom and wove towards this first weaving. The section which closes the final unwoven space is referred to as the join.

Join: the weaving (sometimes evident because of looseness) which closes the space between the heading strip and the working edge. Whereas in most textiles the join is close to the loomstring, in some of these shaped cloths it is near the center (narrow) section.

Key weft: synonymous terms are scaffold weft and skeleton weft. Weft yarns existing or used (and removed) at point of contact of warp yarns of differing colors. In all specimens here observed, the warp yarns were not interlocked; the key weft remained in place in the finished textile; with its removal the textile would separate into two pieces (pl. 10, c).

Loomstring: the first heavy wefts put across the warp yarns at each end of the web which regulate the spacing of the warps and render the web more stable.

Needleknitting:³⁸ a term given modern plaited cross stitch.

Pick: one passage of the weft through the shed, from one side to the other.

Piece: a finished textile specimen of one breadth; here used interchangeably with breadth.

Plain weave: over-one-under-one weaving.

Semibasket: single warps crossed by paired wefts or paired warps crossed by single wefts.

Setup: complete warp in ordered arrangement on the loom.

Shot: synonymous with pick and used interchangeably.

Skeleton weft: see **key weft**.

Tenter: a stick placed under and just behind the working edge. The web is pinned to the stick to maintain uniform width of the fabric. In the construction of shaped cloths a series of tenters of varying widths would have been needed; it is very doubtful if they were used.

Thread count: number of warp and weft yarns per unit of measurement: here the unit is 1 inch. Unless otherwise designated, thread counts were made along the central longitudinal axis of each piece and at stated intervals. Whereas in most cloths a thread count at one spot for each type of weave may be taken as representative of the whole, in these breechcloths, all plain weave, the shaping made the warp-weft counts vary in the length of the textile; hence counts were made at intervals.

Twist: spun fibers with a spiral moving upward to the left are left-twist yarns (S-twist); with a spiral moving upward to the right, right-twist yarns (Z-twist). Degree of twist is measured by the angle taken by the spiral in relation to a vertical axis. Yarns with less than a 25-degree angle are designated as loose-twist; 25-degree to 30-degree, as medium-twist; 30-degree to 45-degree, as hard-twist; beyond 50-degree, as crepe-twist.

Warp face: textile surface in which warp count exceeds weft, and warp yarns show predominantly or wholly.

Warp lock: a system for setting up a multicolored warp by end-to-end meeting with neighboring warps over a heavy key weft (pl. 10, c).

Web: textile fabric; term usually used to denote the fabric under construction on the loom.

Whipping stitch: an overcasting or seaming stitch.

³⁸O'Neale, 1934. Since Dr. O'Neale's paper was published, Mary Thomas's Dictionary of Embroidery Stitches (p. 30) has listed this technique as "Ceylon stitch." In spite of the reasons for using terminology from the most readily available source, I prefer the descriptive term to the geographical, which has no significance, and have continued its use in this paper.

BIBLIOGRAPHY

ABBREVIATIONS

AA	American Anthropologist	FMNH-M	Field Museum of Natural History, Memoirs
BAE	Bureau of American Ethnology	SAA-M	Society for American Archaeology, Memoirs
-B	Bulletins	UC	University of California Publications
-R	(Annual) Reports	-AR	Anthropological Records
CIW	Carnegie Institution of Washington Publications	-PAAE	American Archaeology and Ethnology
CU-SAE	Columbia University Studies in Archaeology and Ethnology	UP	University of Pennsylvania Publications Anthropology
		-PA	

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- Bennett, Wendell C. (ed.)
1948. A Reappraisal of Peruvian Archaeology. SAA-M 4. Menasha, Wis.
- Farabee, William C.
1924. The Central Caribs. UP-PA 10. Philadelphia.
- Graumont, Raoul, and John Hensel
1946. Encyclopedia of Knots and Fancy Rope Work. Cornell Maritime Press. New York.
- Kroeber, A. L.
1937. Archaeological Explorations in Peru, Part IV, Cañete Valley. FMNH-M II:4. Chicago.
- _____ and William D. Strong
1924. The Uhle Collections from Chíncha. UC-PAAE 21:1. Berkeley.
- Maerz, A., and M. R. Paul
1930. A Dictionary of Color. McGraw-Hill. New York.
- Means, Philip A.
1931. Ancient Civilizations of the Andes. Charles Scribner's Sons. New York.
- Montell, Gösta
1929. Dress and Ornaments in Ancient Peru. Elanders Boktryckeri Aktiebolag. Göteborg.
- O'Neale, Lila M.
1933. A Peruvian Multicolored Patchwork. AA 35:87-94.
1934. Peruvian Needleknitting. AA 36:405-430.
1945. Textiles of Highland Guatemala. CIW 567. Washington.
- _____ and A. L. Kroeber
1930. Textile Periods in Ancient Peru. UC-PAAE 28:2. Berkeley.
- _____ et al.
1949. Chíncha Plain-Weave Cloths. UC-AR 9:2. Berkeley.
- Roth, Walter E.
1924. An Introductory Study of the Arts, Crafts and Customs of the Guiana Indians. BAE-R 38. Washington.
1929. Additional Studies of the Arts, Crafts and Customs of the Guiana Indians. BAE-B 91. Washington.
- Strong, William D., and Gordon R. Willey
1943. Archaeological Notes on the Central Coast. CU-SAE 1:1. New York.
- Thomas, Mary
1935. Mary Thomas's Dictionary of Embroidery Stitches. William Morrow. New York.
- Uhle, Max
1903. Pachacamac. UP. Philadelphia.

PLATES

EXPLANATION OF PLATES

Plate 8

Chincha and Hungara breechcloth details. a, b, sections of Chincha breechcloth (UC 4-3883c). Dotted lines in diagram p. 161 indicate areas of photographs. a, center section of Breadths A and B showing whipping-stitch seam. Note lack of congestion along selvage; crinkly appearance of cloth due to creped yarns. Natural size. b, front section of Breadth B. Shows even spacing of warps and wefts; creped spinning of yarns. Natural size. c, section of Hungara breechcloth (UC 16-7198) showing warp lock and whipping-stitch center seam. Natural size. d, section of Hungara breechcloth (UC 16-7199) showing whipping-stitch center seam; creped yarns; even spacing of warp and weft; lack of congestion along selvage. x2.

Plate 9

Details of Chincha breechcloth (UC 4-4122c). Dotted lines in diagram p. 162 indicate areas of plates. a, showing warp lock over key weft. Join approximately $1\frac{1}{2}$ inches from key weft in both halves. Natural size. b, checked front section. Natural size. c, plain white rear section. Natural size.

Plate 10

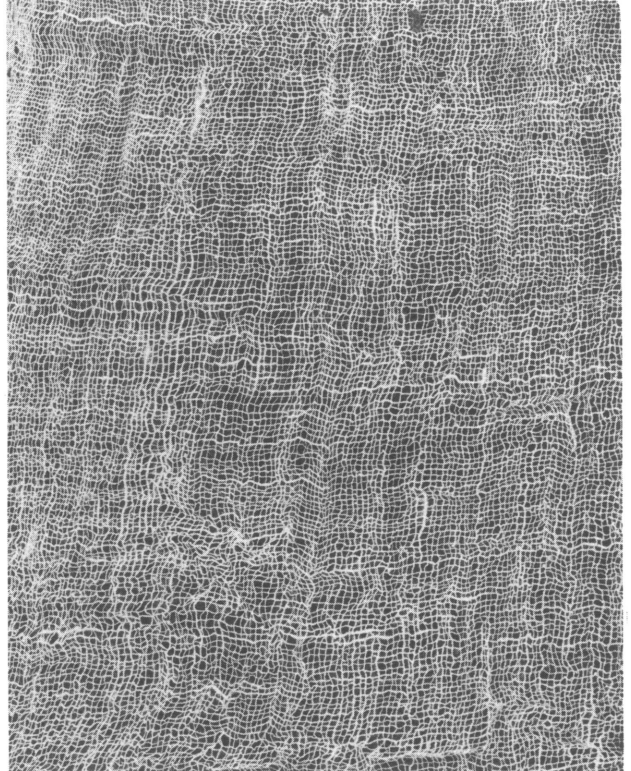
Chincha and Hungara breechcloths. a, Chincha (UC 4-4122c). Specimen exhibiting warp lock over key weft. Actual length $33\frac{1}{2}$ inches. b, Hungara (UC 16-7198). Breadth A. Specimen exhibiting warp lock: brown cotton front and white cotton rear. Needleknitting in two colors along outer edges of brown section. Actual length $31\frac{1}{2}$ inches. c, Reconstruction of warp lock over key weft. d, Hungara (UC 16-7193). Heavy cloth, atypical shaping. Join close to narrow loomstring. Fold lines running diagonally from wide end to ties at narrow end. Width of longer loomstring, $21\frac{1}{2}$ inches. e, Hungara unshaped cloth (UC 16-7203). Warp face, wool breechcloth with needleknitted edges. Note similarity in placement of ties to previous specimen. Actual length $13\frac{1}{4}$ inches. f, Hungara, knotted breechcloth (UC 16-7201). Shaped breechcloth in two breadths as removed from spoil heap. Dark brown in color.

Plate 11

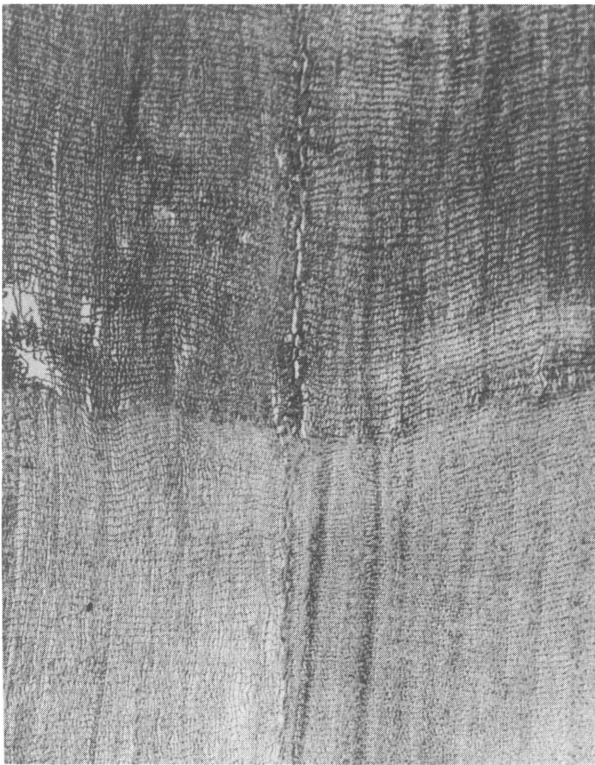
Hungara breechcloths. a, Rose-colored breechcloth (UC 16-7195). Breadth A extended. Join approximately 3 inches from Loomstring 2. Uneven spacing of wefts throughout. Wrinkling along outer edges of both breadths. Greatly worn. Actual length $31\frac{1}{4}$ inches. b, Brown and white checked breechcloth (UC 16-7197). Breadth A. Whipping-stitch seam has parted and Breadth B separated along part of selvage. Knot tied in corner of Loomstring 1. Needleknitting along outer selvage of both breadths of front end only. Length 29 inches. c, Rose-colored breechcloth (UC 16-7199). Breadth A. Join beginning $1\frac{1}{2}$ inches from Loomstring 1. Poor spacing of warps and wefts except in narrow center section. Needleknitting in natural wool along outer selvages of front end of both breadths. Actual length 33 inches. d, Brown and white checked cloth (UC 16-7202). Breadth B. Knot in corner. Join near Loomstring 2. Length $31\frac{1}{4}$ inches. e, Brown and white checked breechcloth (UC 16-7204). Breadth A. Knot tied in portion of Breadth B. Actual length $31\frac{1}{4}$ inches. f, Brown and white plaid breechcloth (UC 16-7205). Breadth A. Actual length 16 inches.



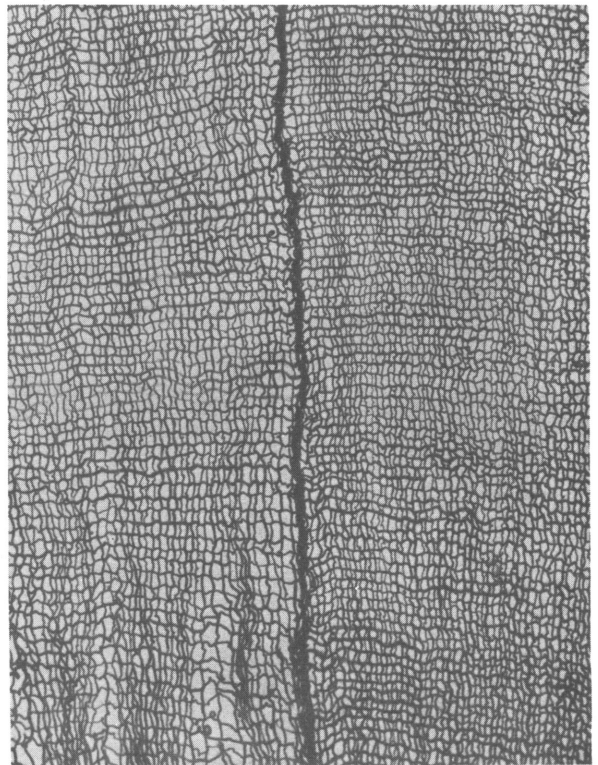
a



b

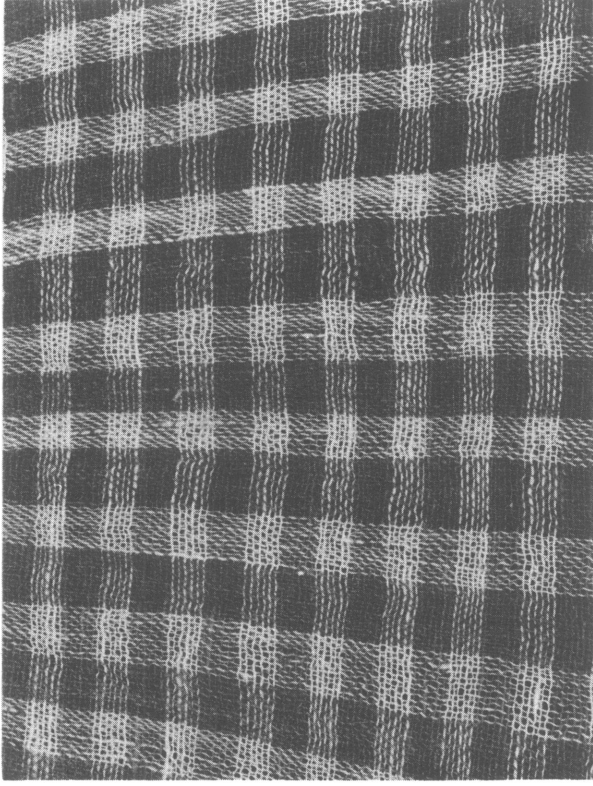


c

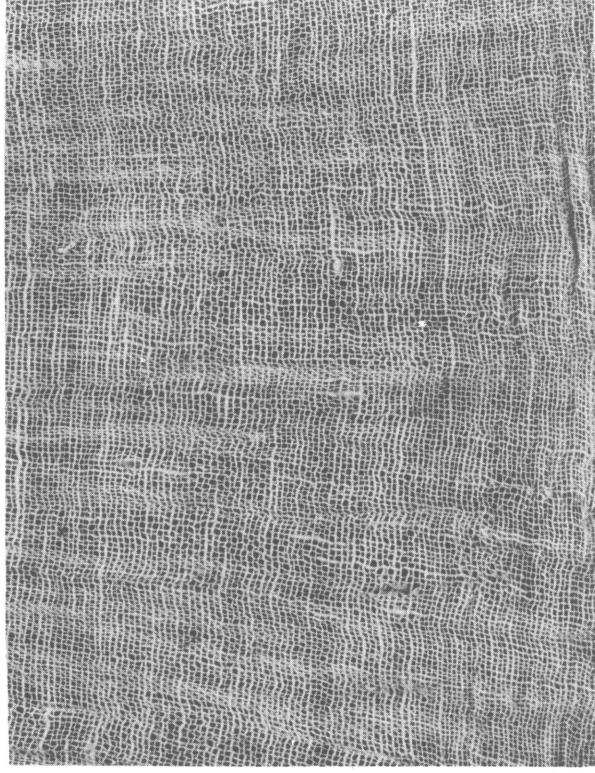


d

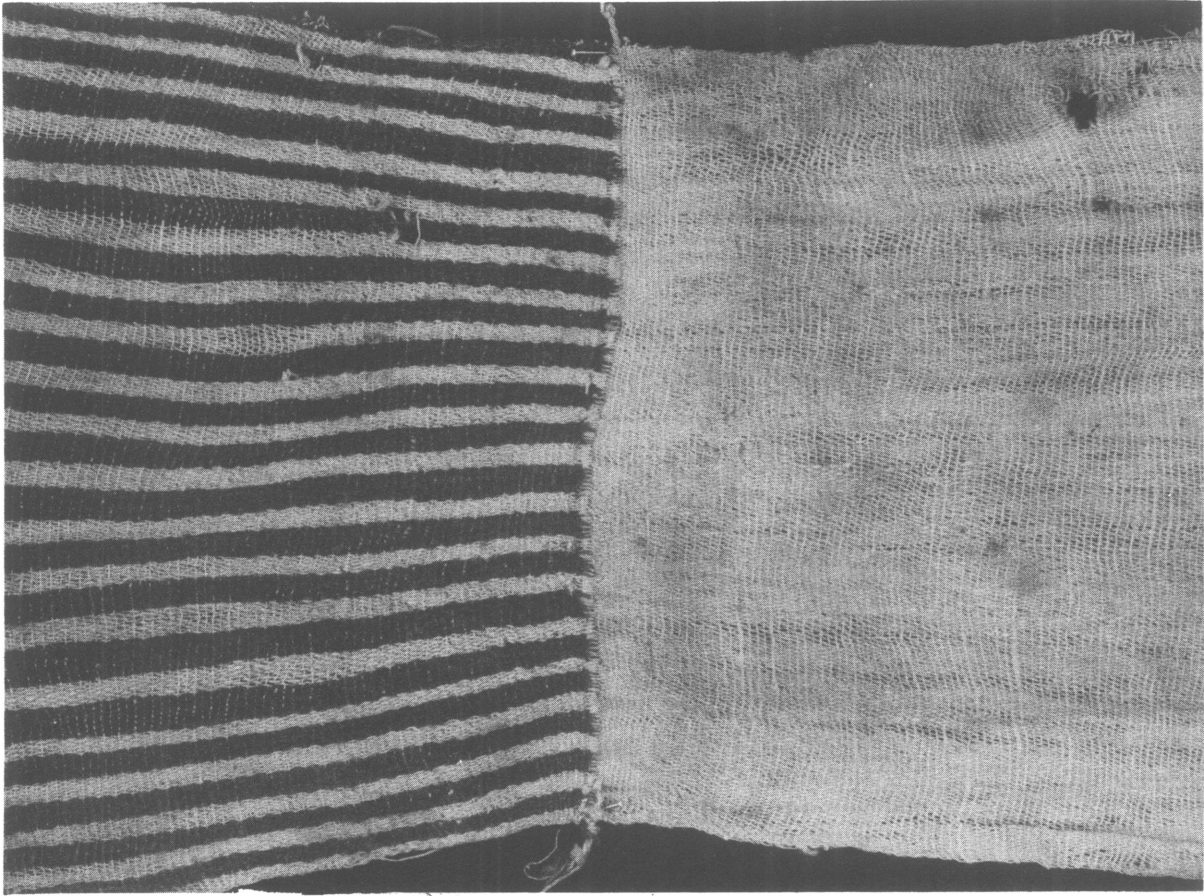
Plate 8. Chincha and Hungara Breechcloth Details



b

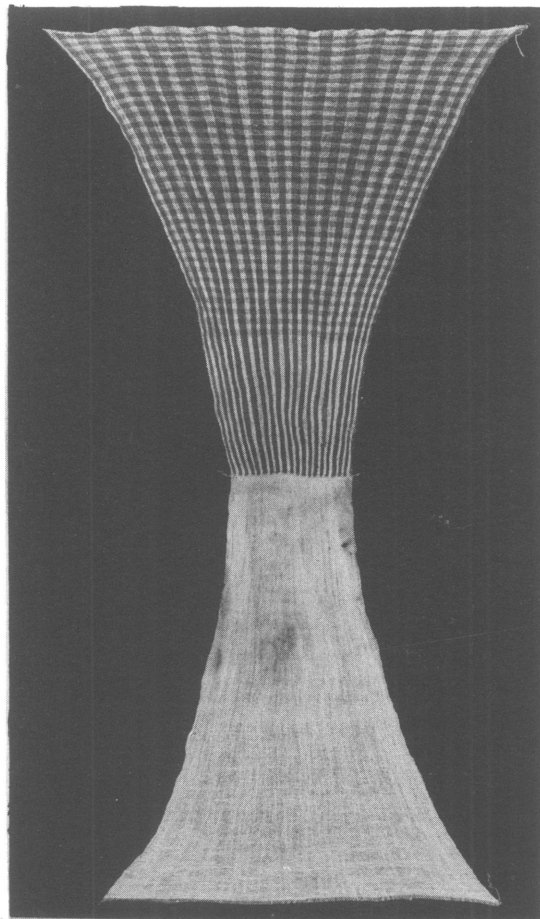


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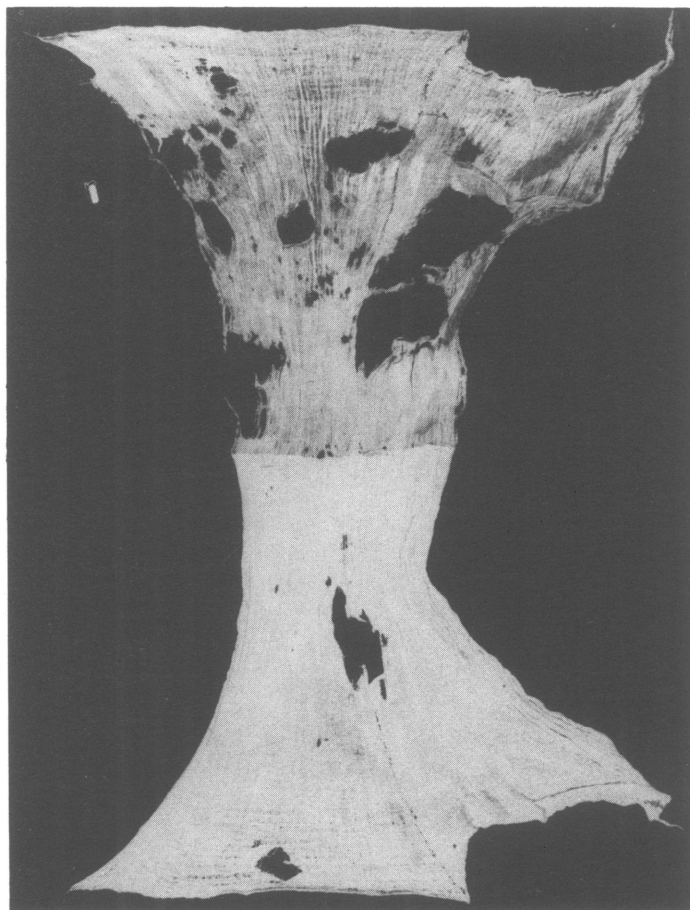


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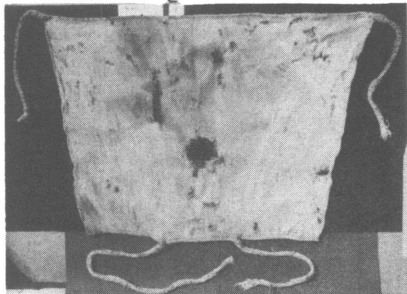
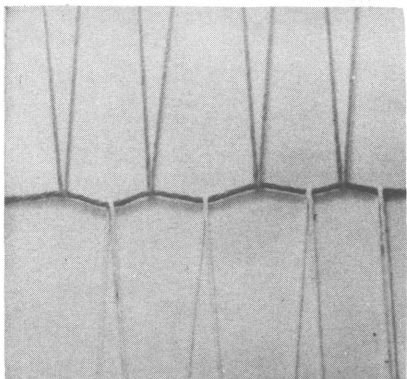
Plate 9. Chincha Warp-locked Breechcloth Details



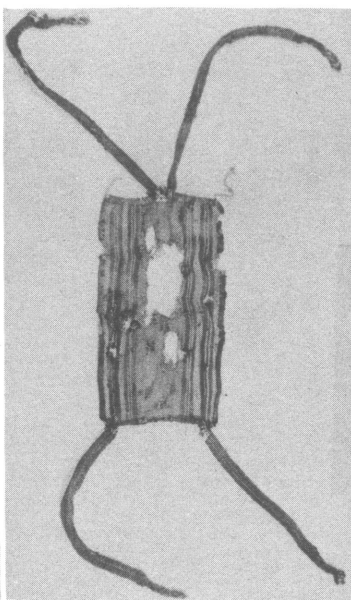
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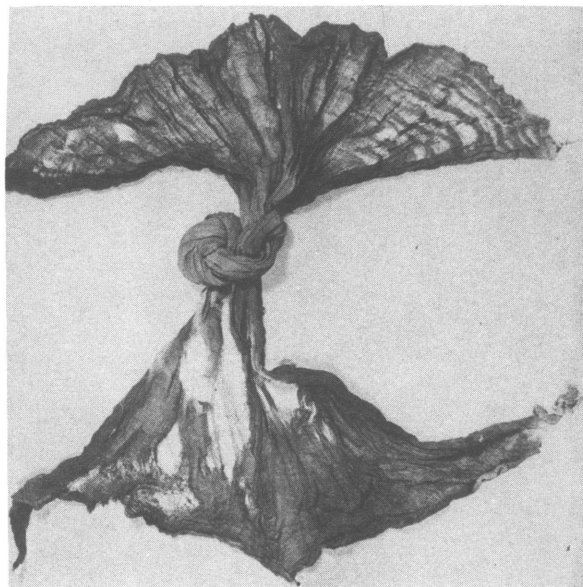
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c

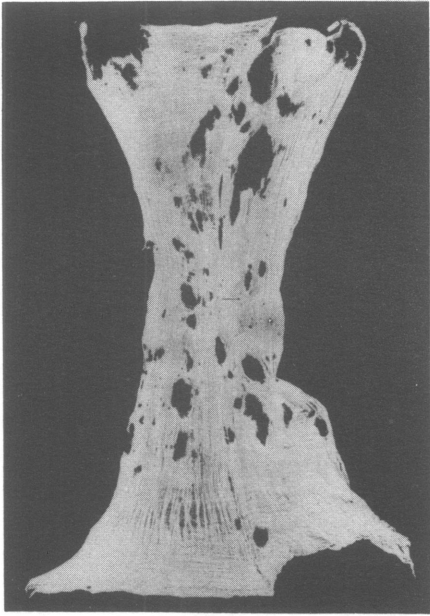


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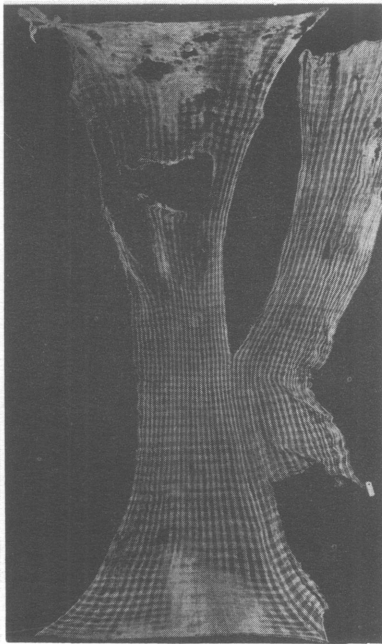


e

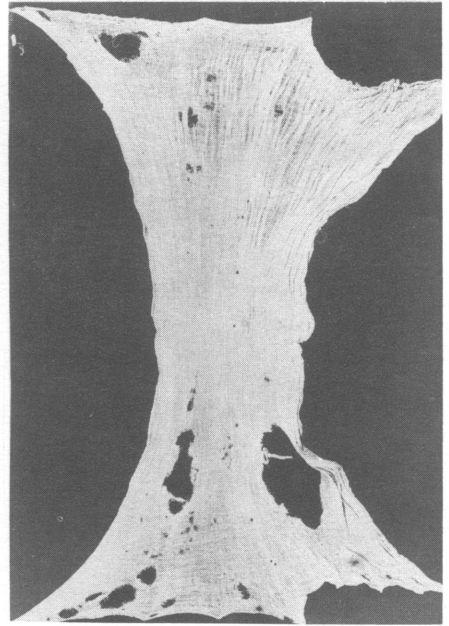
Plate 10. Chinja and Hungara Breechcloths



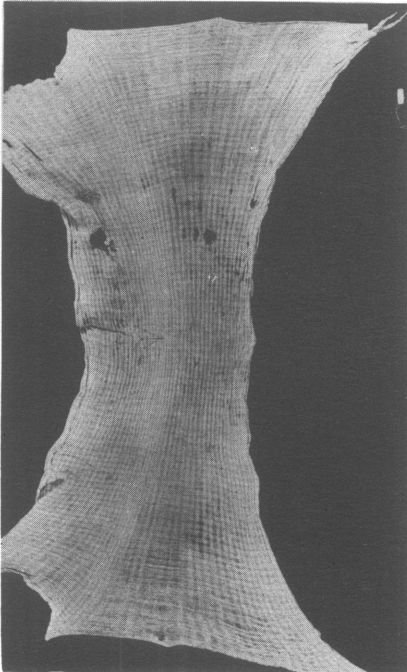
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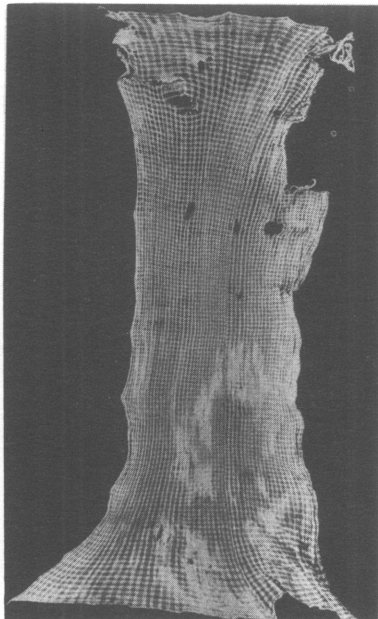
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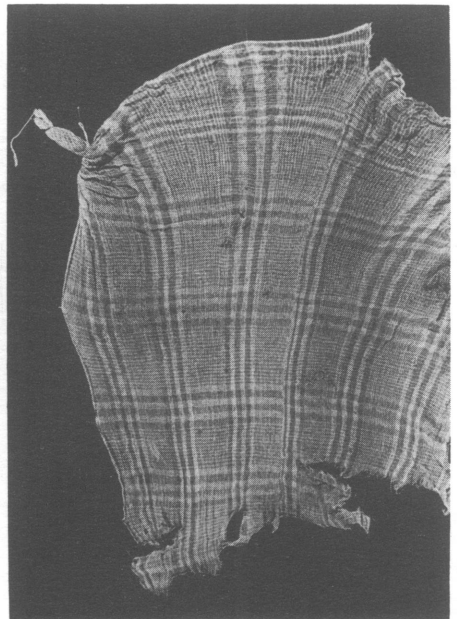
c.



d.



e.



f.

Plate 11. Hungara Breechcloths