

A CACHE OF INCA TEXTILES FROM RODADERO, ACARÍ VALLEY, PERU

Grace L. Katterman
Western Archeological and Conservation Center

Francis A. Riddell
California Institute for Peruvian Studies

Introduction

In 1988, while working at the site of Tambo Viejo (PV 74-1) in the Acarí Valley, south of the Nazca area, the California Institute for Peruvian Studies (CIPS) received word from a local assistant, Eduardo Montoya, that an acquaintance had discovered a cache of textiles at Rodadero (PV 74-4), a hillside site directly east and across the river from Tambo Viejo (Figure 1). While little is known of Rodadero, considerable archaeological progress has been made toward understanding the role of Tambo Viejo as one of a series of provincial Inca administration centers built along the southern arm of the main coast road (Menzel and Riddell 1986 [1954]:10-116; Rowe 1956:137-138). The remains of Tambo Viejo extend 1.5 kilometers along a bluff overlooking the Acarí River. Sherds with Inca and Inca related elements, including those locally standardized and transformed, are present on about 12.6% of the ceramics collected there (Menzel and Riddell 1986 [1954]:82). The formal, pre-conceived planning of rectangular structures grouped around courtyards, the long walls and corridors, and large central plazas with platform mounds presents an arrangement at Tambo Viejo similar to other Inca centers scattered along the roadway system (Hyslop 1985:14-31; Menzel 1959:220-223; Morris and Thompson 1970:345).

The Inca road, visible from the east platform mound in the main plaza at Tambo Viejo, still cuts a straight line across the stretch of dry plains extending from the river valley toward the direction of Nazca to the northwest. The roadway is noted coming into the Acarí Valley from this direction as recorded by sites PV 74-63 and PV 74-64 (Menzel and Riddell 1986 [1954]:figure 4; Riddell and Valdéz C. 1988:62-63). Other Inca sites are recorded for the Acarí Valley as

far up as Huanca (PV 74-80) and beyond into the area around Puquio and the headwaters of the Acarí River (See Figure 1). It is only reasonable to expect that a branch of the Inca road went up the Acarí river and to Puquio, probably by way of the trail still in use today. Traces of the same roadway are visible at various other points along the way.

The roadway from the northwest, from Nazca, enters the main plaza at Tambo Viejo. It heads directly for the entrance of a sunken room in the main platform mound. Also from the platform, looking east across the river, the roadway can be seen skirting the slope of the mountain side, cutting directly through the site of Rodadero.

Rodadero was first visited by archaeologists in 1954 when Dorothy Menzel and Francis Riddell recorded the site (Menzel and Riddell 1986 [1954]:Figure 2; Riddell and Valdéz C. 1988:8). It consists of remnants of retaining walls, as well as room and compound walls. Their construction was primarily of *pirca* (dry-stone wall) and adobe brick held together with mud mortar. The segment of what appears to be the Inca road passes directly across the site, ultimately to rise and cross the mountains to Jaqui in the Yauca Valley to the east. The eastern terminus of this segment of the Inca road system was probably the major Inca site in the Yauca Valley now known as Hacienda Tocota (PV 75-17).

Because the site of Rodadero is on a rather steep, sandy slope, the inhabitants terraced it to provide several level areas. It is aptly named Rodadero, "rolling easily", that is, "rollable" or "easily sliding", in Spanish. The down-slope side of the site is littered with cultural debris including ceramic sherds, mollusk shells, and camelid bones. Vandals have excavated several burials. Evidence is the weathered human remains scattered

about. In addition to *pirca* and adobe brick, a scattering of cane at the south end of the site suggested *quincha* (wattle and daub) construction. Pottery is primarily brown utility ware including wide-mouth and necked storage jars, large plates, and small and large cooking vessels. Also on the surface of the site were a considerable number of basalt cores, core tools, and flakes. One obsidian flake was noted and collected.

The structure where the cache of textiles was discovered is located several hundred meters to the north of Rodadero proper. Drifting sand has obscured clear evidence of other buildings in close proximity. Even though the remains of the structure appear to be singular, they are considered to be part of the site as a whole. Cultural refuse, though not abundant, was the same as observed at the site proper. Noted from the surface near the structure were a few decorated sherds identified in the field as Inca, or Inca-derived. No further description of these sherds is presently available.

No direct association of any diagnostic cultural elements was noted with the textiles. Because of the cover of drifted sand, it was not possible to determine in the short time available whether the room where the textiles were discovered was divided into a series of cubicles as was noted in Area D at Tambo Viejo, and at the sites of Quebrada de la Vaca and La Caleta near Chala (Menzel and Riddell 1986 [1954]). The impression gained at the time of recovery was that the structure was a single room, not a cluster of small rooms, as just noted above. It was not possible to determine if the room had openings, or which direction they might have faced. In that the storage structure (room) appears to be an individual unit on the slope of a hill overlooking Tambo Viejo, it resembles the location of Inca storage units recorded at Huánuco Viejo (Morris and Thompson 1970:345) and the Upper Mantaro Valley (D'Altroy 1992:163-178; Earle and D'Altroy 1982:265).

The Discovery at Rodadero

The enclosure in which the textiles were found gave no evidence on the surface of its function. Some unknown person had dug into the ruins of a sand-filled room north of

the main section of the site and encountered a stack of folded textiles. Whether the room was a storehouse, or whether it was a common room used to cache the textiles, is not clear. Time and abundant sand prevented its thorough review beyond noting that it was constructed of adobe brick.

Most of the textiles were taken out and tossed to one side and abandoned because of their apparent lack of value to the person doing the digging. They had been removed in groups, however, or in a partial pile so that they were not simply scattered about. A few of the better ones were salvaged by Eduardo Montoya who brought them to CIPS, informing the Institute that the rest remained at the site. These, too, were salvaged and a team of archaeologists cleared the artifact hunter's hole to see if they could get additional details (Figure 5). Their effort produced little more than what was already apparent. The textiles had been folded and piled in an adobe brick-walled room. Through the years they had become covered by sand. Unknown circumstances had prevented their removal and use after storage. All but a few examples were in such poor condition that it is unlikely that any was removed by the *huaqueros*. Not only had they suffered severely from contact with the sand and soil, but the oxidation of a dark brown dye substance had further contributed to their decomposition. The disturbance by the *huaqueros* had so disrupted the cache of blankets that their order of placement in storage could not be reestablished. After cataloging, the blankets were wrapped, boxed, and transported to CIPS' storage facility at the Universidad Católica de Santa María in Arequipa. They remain there today in the care of Dr. Augusto Belan Franco, Professor of Archaeology and Co-director of CIPS fieldwork in Peru. In March of 1990, Riddell, Katterman, and Cornelia H. Frisbee-Houde visited the facility in Arequipa to conserve and analyze the cache of textiles. Katterman returned to Arequipa in June of 1993 to continue conservation and to take fiber samples for analysis.

The Rodadero Cache

The textiles encountered at Rodadero are rectangular cloths resembling blankets or

mantles. In the literature, they are generally referred to by their Spanish name, *mantas*. These cloths served a number of important utilitarian purposes during Inca times and earlier. Not only did they serve as the basic outer garments wrapped around the body and shoulder of men and women, they were also utilized as carrying cloths for transporting infants and produce. At night, they doubled as sleeping covers (Murra 1980:120).

The small *mantas*, woven in one web, averaged 100 cm in warp length by 70 cm across the weft distance. There were 14 of these in the cache (Figures 10-13). All but one display a color pattern of three equal stripes running lengthwise, bordered by a barred stripe along the weft edges.

The completed large textiles were woven in two long webs or panels. Their color pattern consists of a wide stripe and a thin stripe running lengthwise along the outer sides of the panels (Figures 2-4, 6-9). There were 57 such large, standardized panels in the cache, only two of which had been permanently stitched together to make a finished *manta*. The remainder had been folded either as matching pairs of panels, or as unmatched single panels. When completed, an average large textile would have measured approximately 165 cm in length by 162 in width, or approximately 4 times the size of the small *mantas* in the cache.

When cataloged, the unmatched single panels and the small *mantas* were given individual catalog numbers. The large finished *mantas* and pairs of matching panels were also listed as single entries. The panels appear as parts "a" and "b" of their respective catalog numbers. In Table 1, the various examples are listed as they were cataloged, accompanied by their color combinations and dimensions (warp distance x weft distance in centimeters) in so far as these were determinable. Incomplete distances are followed by a plus sign (+). Despite problems of decay, selvedge-to-selvedge measurements were determined for many examples.

The Large Panels

Because most of the large textile specimens were stored as unstitched panels, they

will generally be described this way, rather than as whole *mantas*. While only two of the 57 large panels in the cache had been finished with a permanent central seam and an edge binding (Figures 2 and 4), thirty-four other panels had been folded together as 17 matching pairs, ready to be stitched and finished (Figures 6-8). Six of these pairs retain the remnants of a loose basting stitch along the inner edge. The dimensions of large panels which were measurable range from 78 to 88 cm in width by 148 to 182 cm in length.

The remaining 21 large panels in the cache, or approximately one third, were single examples folded individually. Similarities of size, color patterning, and the position of damaged areas suggest that at least two of these, Panels 4 and 5 (Figure 9), were most likely a matching pair separated in the disturbance. Other single panels are not so easily matched and there were probably good reasons why they were stored singly (see Table 2). Panels 24, 29, 38, and 41, for instance, show coloration or a color sequence unique to the group. Other single panels with a possible color match are not compatible in length. An interesting deviation occurs in the arrangement of the striped pattern in Panel 13; the placement of the wide and thin stripes has been interchanged.

The Folding Sequence

Many of the panels were found folded in a special manner, and those which had been opened retained the creases of the same folding sequence. The panels of the matching pairs and the large finished *manta* had first been aligned on top of one another, as shown in Figure 3a. A fold was made across the width of the panels, reducing their length in half. Two more widthwise folds in the same direction followed (Figure 3b-d), producing a product approximately 80 cm x 18 cm. The single panels were folded with the same series of three widthwise folds. The folding helped maintain the status of the panels during the disturbance. Most of the pairs clung together, and the single panels appeared to have been folded that way originally. The manner of folding the panels encompassed most of the warp length, but left the panels exposed along the sides and ends of the

folds. This is where the most damage occurred.

Yarn and Weaving

Both the warp and weft of the panels is z-spun and S-plied (z-S) cotton yarn. The weft yarn is hard-spun to an angle of 45-55 degrees and ranges from 0.3 to 0.5 mm in diameter. The warp is approximately 0.3 mm, and is slightly overspun.

All the panels have been woven in warp-faced plain weave. While the most common woven density is 22-24 warps/cm to 7 wefts/cm, thread counts range from 18 to 48 warps/cm and 7 to 9 wefts/cm. Even some matching pairs of panels show quite dissimilar thread counts. All four edges of the panels have loomed or "self" selvages where both warp and weft turned about a final yarn back into the panel. The side selvages are not reinforced in any way, but at the top and bottom ends, the warp envelopes three shots of a heavy heading cord (Figure 2d). The long leader from the cord is often attached.

Fiber and Color

While the soft, matte surfaces of the textiles suggest they are constructed of cotton, the dyed yarns are stronger than those usually associated with color-treated cotton fiber. In June, 1993, fiber samples were taken from various colored areas of representative examples. Under the microscope, all colors of fiber samples displayed the wavy, ribbon-like form characteristic of cotton. Yarn samples of predominant colors were also compared with color charts in the Munsell Book of Color (Munsell Color Company, 1973). In the following paragraph, color notations corresponding to the yarn samples are enclosed in parentheses after the name of the color.

The predominant coloration of the large panels centers around five basic hues: cream (10YR:9/1 through 8/3), tan (10YR:7/3; 7.5YR:7.6; 2.5YR:7/2), medium brown (10YR:5/4), dark brown (5YR:3/2), and blue (10B:4/6). In addition, there are three examples with yellow-tan, two with red (7R:5/6), and one with gray-tan. The cream, tan, and medium brown appear to be the natural hues of cotton fibers seen in archaeological textiles from the Acari Valley, and the

rest, the result of dye processes. No test was performed as a verification of dye substances. In Table 1, colors thought to have resulted from dye processes are designated by bold capital letters while those considered natural tones are in plain lower case.

Two occurrences come to mind which may explain the unusual depth of coloration found in the dyed cotton yarns. First, the panels were new when they were folded and stored. Their placement together in the enclosure and their eventual burial under the sand shielded them from the damaging rays of the sun and weather, the prime agents of color deterioration. Second, the dye substances, *i.e.*, red, blue, and dark brown coloration, may not have been applied to white cotton, but rather over a shade of tan or brown which would have contributed significantly to the depth of the dyed color. This seems the case with the red stripe in Panels 35a and 35b (Figure 8). Where damage has caused the red to fade or run, the lightened yarn retains a markedly tan cast. The blue dye, on the other hand, appears color-fast and shows little or no evidence of fading. Areas with the dark brown generally show severe oxidation, as mentioned, which causes the brown to deepen or blacken as it decomposes.

Pattern and Color

The color pattern of three of the large panels cannot be determined beyond the presence of an oxidizing brown dye substance (Panels 42, 43, and 44). In most of the 54 others, the pattern is easily discernible. A plain field composes approximately two thirds the width of each panel and the remaining third has a large stripe of contrasting color, bordered along its outer edge by a narrow stripe repeating the color of the field (Figures 2-4, 6-9). Being warp-faced, the same field and stripe composition shows on both the face and reverse (Figure 7).

Approximately 75% of the panels show an arrangement where the lighter natural hues of cream and tan are used in the field and small stripe, and the darker colors (brown, dark-brown, blue, and red) were used in the wide intervening stripe. Approximately 25% showed some reversal of the color sequence

wherein medium brown or dark brown was found in the large plain field and narrow stripe, with a lighter or contrasting color in the wide stripe in between. Neither red nor blue was ever employed in the large field area, but only in the wide stripe.

Large Manta Examples

The coloration of the lone finished *manta*, with the central seam and bound edges, Example 17 (Figure 4a), presents a tan field flanked by the remnants of a dark brown stripe along the edges. The stripe has mostly decomposed from oxidation of the dark brown dye substance and the interior tan field has also decayed along the folds, leaving what remains of Example 17 in three large fragments. It was sad to find that the only finished example in the cache was in such sorry condition. The illustration in Figure 2 is intended to represent the general appearance of Example 17 as it would have looked if intact. Presumably, the other pairs of matching panels would also appear the same if they had been finished.

Example 17 has been sewn together up the center with a tight fish bone stitch (Figures 4b and 2b). To make the seam, the panels were placed adjacent to one another, with the seaming yarn stitched from one side to the other across the central opening. Emery shows the face and reverse of this seam as it would look as an embroidery stitch (1980:238, figure 359). The top and bottom of the blanket or garment has also been finished with a binding of cross-knit loop stitching (Figure 4c and 2c; also see Emery 1980:243, figure 373 for the flattened equivalent).

Another pair of large panels in a yellow-tan/brown/yellow-tan (Examples 37a and 37b) have also been embroidered with cross-knit loop stitching along the warp edges and a short distance around the corners. In this case, there is no evidence of an accompanying seam joining the panels together.

None of the other panels in the cache show any evidence of a finished seam or binding. Of those which were folded together, however, six pairs have been basted together along the inner selvedge edges

where a final seam would eventually have been taken. Panels 8a and 8b, with a cream/brown/cream color sequence, are a pair which have the basting seam (Figure 6). The horizontal lines of fold are evident across the surface of this example as well as long splits and holes in the large brown stripe. Examples 3a and 3b (Figure 7) were also folded and basted together as a matching pair. The panels have been separated for a short distance at the top for the photograph. Again the areas of decay along one edge and into the fold lines are evident.

Two single panels (Examples 4 and 5) that were found separately appear to match one another. These are shown in Figure 9. Not only are they close to the same size and have the same cream/blue/cream color sequence, but the areas of disintegration along their upper and lower fold lines are so similar that they appear likely to have been folded together in storage. They were evidently abandoned once they were opened and the interior damage became visible.

Panels 35a and 35b (Figure 8), the final example, have brown in the field and red in the wide stripe. An unusual feature is the appearance of tan in the small outer stripe rather than a repeat of the field color. When sewn together, the pair would have produced a *manta* 176 cm in length by 170 cm in width, one of the largest in the cache. Only Panel 41, a single example in yellow-tan/dark brown/yellow-tan, has a longer warp length.

The Small Mantas

The 14 small *mantas* in the cache measure from 93 to 116 cm in length and 68 to 79 cm in width, or approximately one quarter the size of a finished large example. The relative difference in size can be seen by comparing the illustration of the small textiles in Figure 10a with Figure 2a, the large textile illustration.

The Folding Sequence

The small *mantas* had been folded in the same special manner as the large panels. Figure 11 shows the sequence of folding in Example 7, the best preserved example in the cache. In the photos, damage along the center is covered by the folds. The small textiles

were first folded in half across the width (Figures 10c and 11a), folded widthwise again (Figure 10d and 11b), and then folded once more in the same direction (Figures 10e and 11c). The final fold produced a product approximately 12 by 70 cm, a few centimeters shorter in all directions than the large panels.

Yarn and Weaving

Like the large panels, the small cloths are of cotton yarn, but are woven in only one web of warp-faced plain weave, rather than two. Both warp and weft are z-S. All edges are loom-finished, and three shots of a heavy heading cord appear at both warp ends. Their woven density is most commonly 24 warps/cm to 7-8 wefts/cm, a slightly higher count than that of the large panels.

Pattern and Color

The surface of the small *mantas* is divided by color into three more or less equal parts. The two outer fields display one color, and the central field, that of a contrasting hue. A small, barred stripe decorates the outer weft edges (Figures 10b). This produces the general appearance of three wide stripes, running lengthwise, bordered with the barred stripe (Figures 10-13). To make the barred stripe, yarn of contrasting color was added to the loom, every other warp, for half a centimeter or so along the edges, and placed on opposing sides of the shed. With each exchange of the shed during the weaving, the contrasting yarns reversed sides, alternating the color of the bars within the stripe. While the barred stripe comprises only a small section along the edges, the vibrant contrast of the alternating colors quickly catches the eye.

Color combinations most frequently found in the small textiles are sequences of brown/cream/brown and blue/tan/blue, with three respective examples of each. All other color sequences have only one example. These are tan/brown/tan, gray/brown/gray, cream/tan/cream, dark brown/red/dark brown, dark brown/tan/dark brown, dark brown/cream/dark brown, red/dark brown/red, and gray/tan/gray. Interestingly, one small textile did not show the usual tripartite division. Except for the small, barred strip along the outer edges, it is medium

brown throughout. When comparing the coloration of the small *mantas* to the large panels, an interesting difference was found in the expanded use of dyed yarns. Dark brown, blue, and red were more commonly utilized, as was a pure gray not found in the larger size.

Small Examples

While the small *mantas* show less damage than the large panels, all sustained some decay. Example 6 (Figure 12) shows destruction from contact with the soil along the right side. The color sequence of this cloth is blue/tan/blue, with a small, barred stripe of white and blue along the sides.

Another small textile, Example 10 (Figure 13), has a color sequence of tan/brown/tan, with the small, barred stripe along the edges also in tan and brown. Although the right side of this cloth has also suffered decay, enough selvedge remains to determine the position of the barred stripe. Streaks of fading from light damage are visible throughout its surface. Lines of creasing run horizontally through both textiles, marking former lines of fold.

The Quebrada de la Vaca Example

We have recently recognized a small Rodadero-type cotton blanket or *manta* in poor condition among the textiles from an excavated burial house at Quebrada de la Vaca (site PV 77-4), a coastal Inca center in the Chala region over 100 km to the south of the Acari Valley. The textile was found in association with an infant burial. The width of the Quebrada de la Vaca *manta* is divided into three wide stripes, the same as the small textiles from Rodadero. Outer stripes of faded blue flank a cream stripe in the center. A barred stripe of blue and cream borders both weft edges. The textile measures 110 cm in length by 74 cm in width, a size within the upper range of similar small Rodadero examples. The burial house has been dated by Riddell and Menzel to the Late Inca/Early Contact time period. The report on Riddell and Menzel's excavations at Quebrada de la Vaca in the 1950s remains unpublished. None of the other infants in the burial house was wrapped in a small Rodadero-style blan-

ket, and its presence with the infant may or may not be an indication of its primary service as an infant blanket.

Dating the Textiles

While no firm occupation dates have been archaeologically established for Rodadero, a number of factors suggest that the cache of textiles discovered there are assignable to the Inca occupation of the area. First, the passage of the roadway through Rodadero and its proximity to the Inca administration center of Tambo Viejo suggest close ties between the two sites during the Inca occupation of the Acarí Valley. The storage of the textiles in a hillside room overlooking Tambo Viejo fits the common Inca disposition of warehouses within administrative centers (D'Altroy 1992:163-178; Earle and D'Altroy 1982:265, 274; Morris and Thompson 1970:345).

Second, in addition to the Rodadero *mantas*, another group of cloths are thought to have been produced in fulfillment of the *mita* labor tax levied by the Inca. Certain styles of Inca tunics have been found in particular standardized designs, techniques, and sizes (Rowe 1979:239-240). Rowe suggests that the imposition of a labor tax would, of necessity, give rise to the standardization of assessments. The fact that the Rodadero *mantas* were produced in two standardized sizes; that each size is characterized by a specific type of color pattern and fabrication technique; and that all were folded in the same special manner suggests administrative control over their production and storage. The control most likely resulted from Inca enforcement of the *mita*, or labor tax, requirements.

Third, Rodadero textiles are different from known blanket/garment types of earlier time periods in the Acarí Valley. Earlier examples are not standardized, but show individualized arrangements of culturally favored patterns and textile types. Finally, the small blanket accompanying an infant in a burial house at Quebrada de la Vaca has been recognized as a Rodadero-type *manta*. The burial house was dated by Riddell and Menzel to the Late Inca/Early Contact Period. The size, weave-type, and color patterning of

the Quebrada de la Vaca textile is exactly like the small *mantas* found at Rodadero, strongly suggesting that the Rodadero cache dates to the same time as the burials at Quebrada de la Vaca, or late in the Inca occupation. This factor, plus the three listed above point to the Late Horizon Inca occupation of the south coast as the most likely date for the Rodadero cache.

Summary and Discussion

While archaeological examples of *mantas* and other storage commodities utilized by the Inca are rare, early chroniclers have left several written accounts of Inca storage practices. Along with food and clothing, *mantas* were said to have been kept as reserves at *tambos* (way stations) and administrative centers strategically placed along the Inca road system to resupply the traveling army and visiting dignitaries, or were used to help the poor, widowed, and lame (Cieza de Leon 1967, Chapter 18:56-61; Guaman Poma de Ayala 1987:1082[1092]-1093[1103], pp. 1164-1174; Murra 1980:71, 130). Blankets for warehouse storage were collected from each household by local authorities on a yearly basis as part of the tax or *mita* required of the populace (Murra 1980: 71). The recent discovery of a cache of cotton *mantas* at Rodadero, near the Inca administrative center of Tambo Viejo in the Acarí Valley, allows characterization of the size, color patterning, and fabrication technology of two types of storage textiles thought to date to the Inca era.

The large Rodadero *mantas* were woven in two long panels of warp-faced cotton yarn, z-S. Each displays a large central field of plain color bordered by a wide and a narrow outer stripe running vertically along the sides (Figure 2a). With the panels sewn together up the center in a fine fishbone stitch (Figure 2b), a large example would measure approximately 165 cm by 162 cm, and be close to square. All selvedge edges are loom-finished, and three shots of a heavy cord extend across each warp end (Figure 2d). A row of cross-knit loop stitching binds the perimeter or, at least, the top and bottom edges and a short distance around the corners (Figure 2c).

The small *mantas* of utilitarian proportions were woven in one web of warp-faced

cotton measuring roughly 100 cm in length by 70 cm in width (Figure 10a). Again, all selvedge edges are loom-finished, and three shots of a heading cord extend across both warp ends. As patterning, two lengthwise stripes of the same color flank a central stripe of a contrasting hue. These are bordered along the sides, or weft edges, by a small, barred stripe (Figure 10b). Judging from a finished example of this type of *manta* from a burial house in Quebrada de la Vaca, a border of cross-knit loop stitching binds the top and bottom edges and extends a short distance around the corners. If the embroidery stitching continues around the entire perimeter, the identifying barred stripes along the weft edges could be covered, especially if they had been woven along outer the weft edges.

Guaman Poma de Ayala depicts large *mantas* over the *uncus* or long sleeveless shirts worn by men of all classes during Inca times (1987:108[108], 153[153], 342[344]). The *mantas* were passed over one or both shoulders as a cloak and the upper corner were tied together in front below the neck or along one shoulder. The same author also shows large *mantas* utilized by common men as carrying cloths by which sacks of produce or other objects were secured to their backs (1987:244[246], 356[358], 516[520], 531[545], 790[804]).

Women also utilized large rectangular cloths, like those from Rodadero, as dresses called an *acsu* or *anacu* (Castañeda L. 1981:37). They were wrapped around the body below the arms with one or both upper corners passed over the shoulders and pinned. The waist was secured with a *chumpi*, or sash.

Small *mantas*, like those from the Rodadero storeroom, most likely served as the *lliclla* or shawl worn by Inca women over the *acsu* or *anacu* (Castañeda L. 1981:37; Guaman Poma de Ayala 1987:122[122], 173[175], 179[181]). The upper edges of the *manta* were pinned together in front. The latter author also depicts women carrying infants and potatoes on their backs in these cloths (1987:645[659], 654[668], 1147[1157], 1165[1175]).

Because the small *mantas*, and perhaps the large ones as well, were most likely used by women, their presence in the storage room at Rodadero suggests that soldiers and officials of the Inca government may not have been the only recipients of the commodities stashed in warehouses. On occasion, the poor, widowed, and disabled were entitled to welfare from the state (Murra 1962:717), and it seems reasonable that women, including mothers with infants, would have been among them.

The presence of the cache of textiles in the room at Rodadero indicates that the *mita*, or labor tax, system was functioning in the Acari Valley to organize the weaving of textiles, their collection, and their storage in the hillside room. The role that administrative centers, warehouses, and stored commodities played in the Inca economic system is becoming better understood. Murra (1980:121-137) questioned the involvement of the central government in local peasant welfare by effectively differentiating reciprocal exchange of commodities within the ethnic community from commodities collected as taxes and held at the centers for use by the Inca government. Archaeological investigation of the origin and redistribution of goods from warehouses (*collica*) surrounding Huánuco Viejo in the central highlands (Morris and Thompson 1970:344-361) and Hatun Xauxa in the upper Montero Valley (Earl and D'Altroy 1982:265-288) suggests that the Inca centers and surrounding warehouses functioned primarily as links of economic and political support for the central government and were not involved in local commodity exchange. In these investigations, the Inca warehouses were found stripped of their former contents. Likely stored commodities, their origins and patterns of redistribution were assessed through associated data. Considering the general absence of stored commodities dating to the Inca era, the discovery of the textile cache in the Rodadero storage room was a unique and fortunate occurrence.

Analysis of the various examples in the Rodadero cache allows a number of deductions to be offered concerning the storage system they represent. First of all, the state of the cache suggests a somewhat different

understanding of Inca textile storage than that presented by the chroniclers. While they would lead us to believe that blankets, food, and clothing were ready and waiting in warehouses, this was certainly not the case at Rodadero. The fact that only two thirds of the 57 large panels in the cache matched one another and that, of those, only one pair was stitched and bound to make a finished *manta* was certainly a surprise. Regardless of modern expectations, it seems best to assume that the unfinished and partially matched state of the large panels were normal occurrences reflecting the operation of the storage system and the usual manner of textile production in the Acarí Valley.

The unfinished nature of all but one of the large *mantas* suggests that the usual *mita* requirement for weavers in the Acarí Valley involved weaving the panels and nothing more. It further suggests that the weaving and collection of the panels took place before the stitching of the seams and bindings was begun and that the seaming and binding were processes isolated from the weaving. Those who did the weaving were most likely not the same as those who sewed the seams and binding. Just as master weavers had been called upon to do the weaving, it would appear that experts in seaming and needlework were next summoned to add the finishing touches. The fact that the panels were together in one location and the hand work was in process suggests that the seamstresses either worked at the storage room or that it served as a repository where they came to pick up work to be finished.

It further appears that the processes associated with seaming and binding were in their beginning stages and were interrupted at the point where we see them now, well over four hundred years later. It is possible that the cache at Rodadero represents the last collections of textiles to occur in the Acarí Valley before the Spanish conquest of the area. As the Spaniards made their way through the country and news of their impending arrival reached Tambo Viejo and Rodadero, Inca efficiency could be expected to have diminished. The abandonment of the stitching and finishing processes suggests that more pressing needs deterred their completion. The

textiles were systematically folded and piled, however, indicating that there was a regularity and arrangement to the system and that it was abandoned in a neat and orderly state.

The presence of unmatched panels, as many as one third to one fourth of the total, was as perplexing as their general unfinished state. Their abundance suggests that some panels may have been woven and collected singly, *i.e.*, without a mate. Variations in the lengths and woven densities of the panels of some matched pairs suggest that, in some cases, they, too, may have been woven by different persons. Such an arrangement makes sense if an attempt was being made to keep the weaving of the two sizes of textiles an equal labor expenditure. The labor required to weave a small *manta* with the barred stripe and higher thread count seems roughly equivalent to weaving one of the large panels. Thus, the production of one small *manta* or one large panel (half a large *manta*) may have been the labor requirement for weavers in the valley.

The above suggestion is supported by a colonial tax requirement. As Monica Barnes has pointed out (personal communication November, 1993), the Indians of the Acarí Valley continued to pay tax in the form of cotton textiles during the early colonial period. As a result of the 1580 inspection tour (*visita*) ordered by Viceroy Toledo, the 620 tributary Indians of Acarí (Hacari) were ordered to render three hundred nine and a half pieces of men's and women's cotton clothing.¹ This had a monetary value of two pesos per piece, just two percent of the total value of their annual tax. At the time Acarí had an Indian population of 2,404 individuals (Cook 1975:250-251). The inclusion of a fraction (half an item of clothing) in the number of garments to be produced suggests that whole garments were thought of as two halves. The large *mantas*, composed of two panels or halves, were an integral part of the

¹ As the result of an earlier, 1549 *visita*, the Indians of Acarí had been ordered to render 700 cotton *mantas*, 50 cotton garments (*vestidos*), and eight cotton altar cloths (*manteles*), as well as 20 sacks of cotton and eight cotton tarpaulins (*toldos*) (cited by Rostworowski 1993:420).

clothing of the time and could easily be the type of garment ordered by the Viceroy.

The presence of so many unmatched or leftover panels suggests that the *mita* labor tax may not have been an especially efficient system of textile production. If the system had been well-supervised, one would think that the dyers would produce colors of yarn in the amounts specified to make complete sets of matching pairs of panels, that panels for matched sets would be woven to the same length, and that when unmatched panels appeared, feedback into the system would rectify the situation by ordering a match the following year. *Mita* bureaucracy controlling textile assessment did not seem to function in this manner, and it is, of course, unfair to judge the Inca system by modern standards of production and supervision.

Alternate answers to questions concerning the unfinished state of the cache may be reached by following other lines of reasoning. Perhaps the human inclination to expend the least amount of effort to fulfill an obligation should be extended to the bureaucratic

efficiency of the *mita* system in the collection and storage of commodities. Perhaps the *mantas* were finished only when the need for them arose. In a faraway outpost such as Tambo Viejo, having one finished example on hand for an unforeseen emergency may have been sufficient. Or, perhaps the recipients were obliged to add the seams and edge-bindings themselves, or arrange for it, before putting a *manta* to use.

The discovery of the small *manta* accompanying an infant from a Late Horizon burial at Quebrada de la Vaca, of the same size, technique, and color patterning as those from the room at Rodadero, indicates that this type of storage textile had wider use than just within the vicinity of Rodadero and Tambo Viejo. Whether both types of *mantas* were standardized in other areas of the Inca Empire remains to be seen. It is hoped that the descriptive details offered here will lead to their recognition in storage and burial contexts elsewhere, and that comparative data will provide additional answers to questions the discovery of the Rodadero cache has elicited.

References

✓
Castañeda L., Luisa

1981 *Vestido tradicional del Perú/Traditional Dress of Peru*. Lima: Instituto Nacional de Cultura/Museo Nacional de la Cultura Peruana.

Cieza de León, Pedro de

1967 *El Señorío de los Incas (2da parte de la Crónica del Perú)*. Lima: Instituto de Estudios Peruanos.

Cook, Noble David

1975 *Tasa de la Visita General de Francisco de Toledo*. Lima: Universidad Nacional Mayor de San Marcos, Dirección Universitaria de Biblioteca y Publicaciones.

D'Altroy, Terence N.

1992 *Provincial Power in the Inka Empire*. Washington, D.C.: Smithsonian Institution Press.

Earle, Timothy K. and Terence D'Altroy

1982 Storage Facilities and State Finance in the Upper Mantaro Valley, Peru. In *Contexts for Prehistoric Exchange*, edited by J. E. Ericson and T. K. Earle, pp. 265-290. New York: Academic Press.

Emery, Irene

1980 *The Primary Structure of Fabrics*. Washington, D.C.: The Textile Museum.

Guaman Poma de Ayala, Felipe

1987 *Nueva corónica y buen gobierno*. Edited by John V. Murra, Rolena Adorno, and Jorge L. Urioste. Madrid: Historia 16.

Hyslop, John

1985 *Inkawasi, the New Cuzco*. BAR International Series 234. Osney Mead, Oxford, England.

See also: Shimada's intro to *Relaciones de Aldeas* books on Rodadero (p. XXXI)
Casa Velazco's 1939 report in the *Boletín de la Sociedad Geográfica de Lima*
56(2): 95-99

Menzel, Dorothy

- 1959 The Inca Occupation of the South Coast of Peru. *Southwestern Journal of Anthropology* 15:125-142.

Menzel, Dorothy and Francis A. Riddell

- 1986 *Archaeological Investigations at Tambo Viejo, Acarí Valley, Peru, 1954*. Sacramento: California Institute for Peruvian Studies.

Morris, Craig and Donald E. Thompson

- 1970 Huánuco Viejo: An Inca Administrative Center. *American Antiquity* 35(3):334-362.

Munsell Color Company

- 1973 *The Munsell Book of Color*. Newburgh, New York: Kollmorgen Corporation.

Murra, John

- 1962 Cloth and Its Function in the Inca State. *American Anthropologist* 64(4):710-727.

- 1980 The Economic Organization of the Inca State. Supplement to *Research in Economic Anthropology*. Greenwich, Connecticut: JAI Press.

Riddell, Francis A. and Lidio Valdéz C.

- 1988 *Prospecciones arqueológicas en el valle de Acarí, Costa Sur del Perú*. Sacramento and Arequipa: A Report of the California Institute for Peruvian Studies and the Universidad Católica de Santa María, Arequipa.

Rostworowski, María

- 1993 Comentarios a la Visita de Acarí de 1593. In *Ensayos de historia andina*, by María Rostworowski, pp. 419-443. Lima: Instituto de Estudios Peruanos.

Rowe, John H.

- 1956 Archaeological Explorations in Southern Peru, 1954-55. Preliminary Report of the Fourth University of California Archaeological Expedition to Peru. *American Antiquity* 23(2):135-150.

- 1979 Standardization in Inca Tapestry Tunics. *The Junius B. Bird Precolumbian Textile Conference, 1973*, edited by A. Rowe, pp. 239-264. Washington, D.C.: The Textile Museum, and New York: The American Museum of Natural History.

When Albert Driesche excavated Pachacamac in 1938 he discovered storerooms atop the main stepped pyramid. There still had well preserved contents including Inca cloth, maize, hot peppers + peanuts.

Table 1. Catalogue of Rodadero *manta* examples. Colors thought to have resulted from dye processes are designated by bold capital letters while those considered natural tones are in plain lower case.

No.	TYPE OF SPECIMEN	DIMENSIONS ²	COLOR COMBINATION
1a	Lg <i>manta</i> panel	146.5 x 85.0	Brown/Tan/Brown
1b	Lg <i>manta</i> panel	161.0 x 82+	Brown/Tan/Brown
2a	Lg <i>manta</i> panel	166.5 x 79.9	Tan/ BLUE /Tan
2b	Lg <i>manta</i> panel	166.7 x 77.8+	Tan/ BLUE /Tan
3a	Lg <i>manta</i> panel	168.0 x 88.3	Cream/Brown/Cream
3b	Lg <i>manta</i> panel	167.0 x 84.0	Cream/Brown/Cream
4	Lg <i>manta</i> panel	159.0 x 77+	Cream/ BLUE /----
5	Lg <i>manta</i> panel	162.5 x 74+	Cream/ BLUE /----
6	Small <i>manta</i>	105.0 x 79.4	BLUE /Tan/ BLUE
7	Small <i>manta</i>	97.0 x 69.6	BLUE /Tan/ BLUE
8a	Lg <i>manta</i> panel	164.1 x 87.0	Cream/Brown/Cream
8b	Lg <i>manta</i> panel	166.5 x 85.0	Cream/Brown/Cream
9a	Lg <i>manta</i> panel	165.0 x 81+	Cream/Brown/Cream
9b	Lg <i>manta</i> panel	160.0 x 76+	Cream/Brown/----
10	Small <i>manta</i>	93.5 x 71.4	Tan/Brown/Tan
11a	Lg <i>manta</i> panel	160.0 x 58.8+	Cream/ DK BROWN /----
11b	Lg <i>manta</i> panel	156.0 x 58.8+	Cream/ DK BROWN /----
12a	Lg <i>manta</i> panel	142+ x 83.8	Brown/Tan/Brown
12b	Lg <i>manta</i> panel	149.5 x 82.5	Brown/Tan/Brown
13	Lg <i>manta</i> panel	79+ x 78+	Cream/Brown/----
14a	Lg <i>manta</i> panel	166.5 x 87+	Tan/ BLUE /Tan
14b	Lg <i>manta</i> panel	168.5 x 87+	Tan/ BLUE /Tan
15a	Lg <i>manta</i> panel	172.0 x 65+	Brown/ DK BROWN /---
15b	Lg <i>manta</i> panel	172.0 x 65+	Brown/ DK BROWN /---
16	Lg <i>manta</i> panel	164.0 x 87	Tan/ BLUE /Tan
17a	Lg <i>manta</i> panel	168+ x 61+	Tan/ DK BROWN /---
17b	Lg <i>manta</i> panel	160+ x 58+	Tan/ DK BROWN /---
18a	Lg <i>manta</i> panel	162.0 x 81.3	Cream/Brown/Cream
18b	Lg <i>manta</i> panel	80+ x 81.5	Cream/Brown/Cream
19a	Lg <i>manta</i> panel	53+ x 84+	Tan/Brown/Tan
19b	Lg <i>manta</i> panel	56+ x 86+	Tan/Brown/Tan
20a	Lg <i>manta</i> panel	50+ x 83.2	Cream/ DK BROWN /Cream
20b	Lg <i>manta</i> panel	50+ x 83.7	Cream/ DK BROWN /Cream
21	Small <i>manta</i>	107.0 x 69.0	Brown/Brown/Brown
22	Lg <i>manta</i> panel	170.0 x 86.5	Tan/Brown/Tan
23	Lg <i>manta</i> panel	160.0 x ---	---/Cream/Brown
24	Lg <i>manta</i> panel	---- x 52.8+	DK BROWN /Cream/Brown
25	Lg <i>manta</i> panel	175.0 x 80.0	Brown/Cream/Brown
26	Small <i>manta</i>	103.9 x 44+	DK BROWN / RED /---
27	Lg <i>manta</i> panel	---- x 77.0	Tan?/ BLUE /Tan?
28	Small <i>manta</i>	97.5 x 71.0	Brown/Cream/Brown
29	Lg <i>manta</i> panel	165.0 x 54+	-----/Brown/ DK BROWN

² Dimensions given in warp (length) x weft (width) in cm.

Table 1, cont'd.

No.	TYPE OF SPECIMEN	DIMENSIONS ³	COLOR COMBINATION
30	Lg <i>manta</i> panel	165.0 x 66+	Cream/DK BROWN/---
31	Lg <i>manta</i> panel	---- x 26+	Cream/DK BROWN/---
32	Small <i>manta</i>	110.5 x 71	DK BROWN/Cream/DK BROWN
33	Small <i>manta</i>	97.0 x 76.5	Gray/Brown/Gray
34a	Lg <i>manta</i> panel	150.0 x 82.1	Tan/Brown/Tan
34b	Lg <i>manta</i> panel	150.0 x ----	Tan/Brown/Tan
35a	Lg <i>manta</i> panel	176.0 x 85.0	DK BROWN/RED/Tan
35b	Lg <i>manta</i> panel	176.0 x ----	DK BROWN/RED/Tan
36a	Lg <i>manta</i> panel	168.0 x 86.0	Cream/DK BROWN/Cream
36b	Lg <i>manta</i> panel	167.0 x 86.0	Cream/DK BROWN/Cream
37a	Lg <i>manta</i> panel	165.0 x 87.0	Y-TAN/Brown/Y-TAN
37b	Lg <i>manta</i> panel	165.0 x 87.0	Y-TAN/Brown/Y-TAN
38	Lg <i>manta</i> panel	172.0 x 86.0	GY-TAN/BLUE/GY-TAN
39a	Lg <i>manta</i> panel	161.0 x 78+	Tan/DK BROWN/---
39b	Lg <i>manta</i> panel	159.0 x 78+	Tan/DK BROWN/----
40	Lg <i>manta</i> panel	Fragmented	Tan/DK BROWN/---
41	Lg <i>manta</i> panel	182.0 x 88.0	Y-TAN/DK BROWN/Y-TAN
42	Lg <i>manta</i> panel	Fragmented	DK BROWN/----
43	Lg <i>manta</i> panel	Fragmented	DK BROWN/----
44	Lg <i>manta</i> panel	Fragmented	DK BROWN/----
45	Small <i>manta</i>	105.0 x 71.0	BLUE/Tan/BLUE
46	Small <i>manta</i>	106.0 x ----	RED/DK BROWN/---
47	Small <i>manta</i>	102.0 x 71.5	Brown/Cream/Brown
48	Lg <i>manta</i> panel	155.0 x 78.5	Cream/Brown/Cream
49	Small <i>manta</i>	93.0 x 68+	Brown/Cream/Brown
50	Lg <i>manta</i> panel	149.0 x 78.0	Cream/Brown/Cream
51	Small <i>manta</i>	116.0 x 78.0	GRAY/Tan/GRAY
52	Lg <i>manta</i> panel	167.0 x 59+	Tan/DK BROWN/---
53	Small <i>manta</i>	105.0 x 68.0	DK BROWN/Tan/DK BROWN

³ Dimensions given in warp (length) x weft (width) in cm.

Table 2. Large single panels, folded separately.

No.	TYPE OF SPECIMEN	DIMENSIONS ⁴	COLOR COMBINATION
4	Lg <i>manta</i> panel	159.0 x 77+	Cream/ BLUE /----
5	Lg <i>manta</i> panel	162.5 x 74+	Cream/ BLUE /----
13	Lg <i>manta</i> panel	79+ x 78+	Cream/Brown/----
16	Lg <i>manta</i> panel	164.0 x 87	Tan/ BLUE /Tan
22	Lg <i>manta</i> panel	170.0 x 86.5	Tan/Brown/Tan
23	Lg <i>manta</i> panel	160.0 x ---	---/Cream/Brown
24	Lg <i>manta</i> panel	---- x 52.8+	DK BROWN /Cream/Brown
25	Lg <i>manta</i> panel	175.0 x 80.0	Brown/Cream/Brown
27	Lg <i>manta</i> panel	---- x 77.0	Tan/ BLUE /Tan
29	Lg <i>manta</i> panel	165.0 x 54+	-----/Brown/ DK BROWN
30	Lg <i>manta</i> panel	165.0 x 66+	Cream/ DK BROWN /---
31	Lg <i>manta</i> panel	---- x 26+	Cream/ DK BROWN /---
40	Lg <i>manta</i> panel	Fragmented	Tan/ DK BROWN /---
38	Lg <i>manta</i> panel	172.0 x 86.0	GY-TAN / BLUE / GY-TAN
41	Lg <i>manta</i> panel	182.0 x 88.0	Y-TAN / DK BROWN / Y-TAN
42	Lg <i>manta</i> panel	Fragmented	DK BROWN /-----
43	Lg <i>manta</i> panel	Fragmented	DK BROWN /----
44	Lg <i>manta</i> panel	Fragmented	DK BROWN /----
52	Lg <i>manta</i> panel	167.0 x 59+	Tan/ DK BROWN /---
48	Lg <i>manta</i> panel	155.0 x 78.5	Cream/Brown/Cream
50	Lg <i>manta</i> panel	149.0 x 78.0	Cream/Brown/Cream

⁴ Dimensions given in warp (length) x weft (width) in cm.

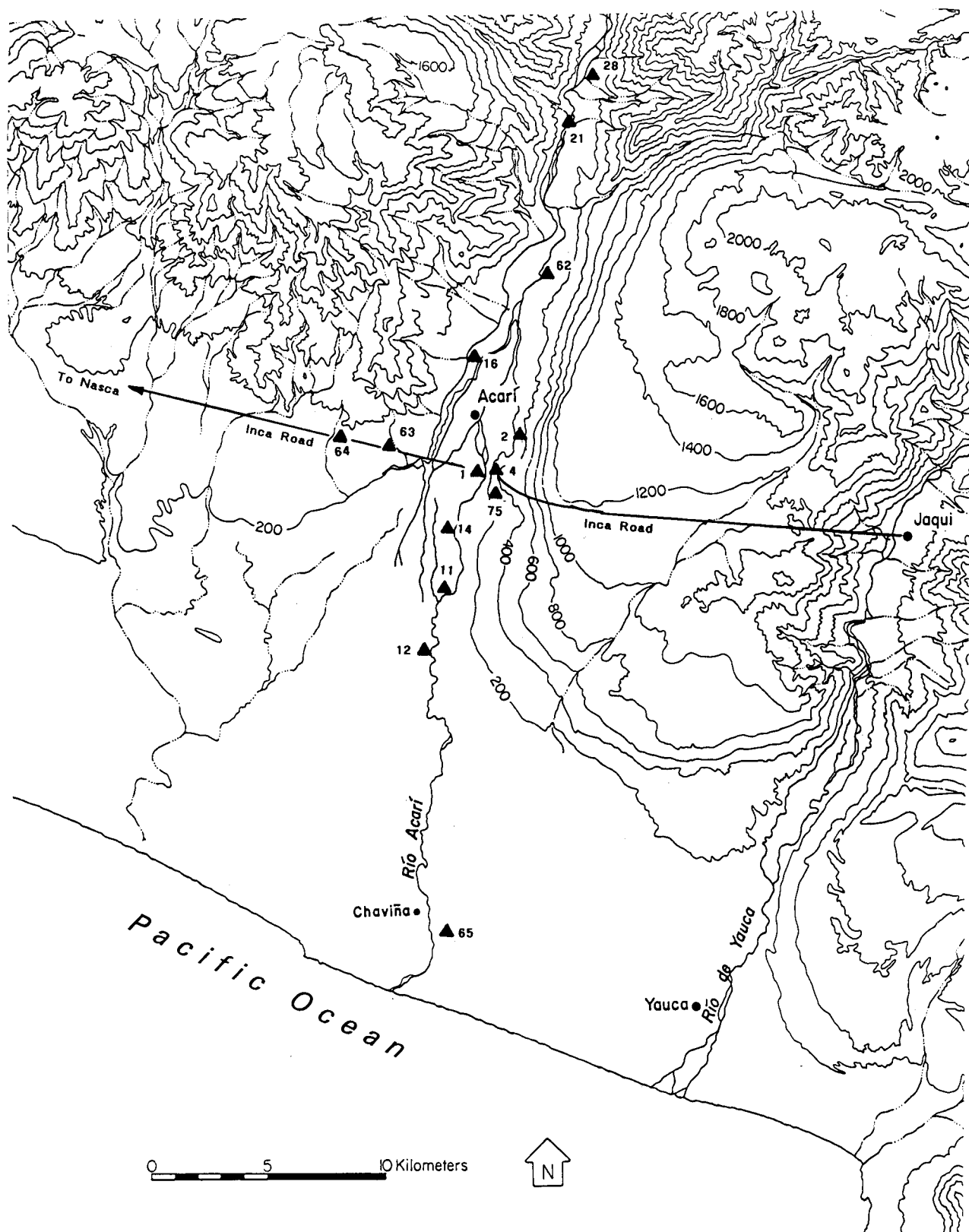


Figure 1. Map of Late Horizon sites in the Acarí Valley. [PV 74-]1 = Tambo Viejo. [PV 74-]4 = Rodadero.

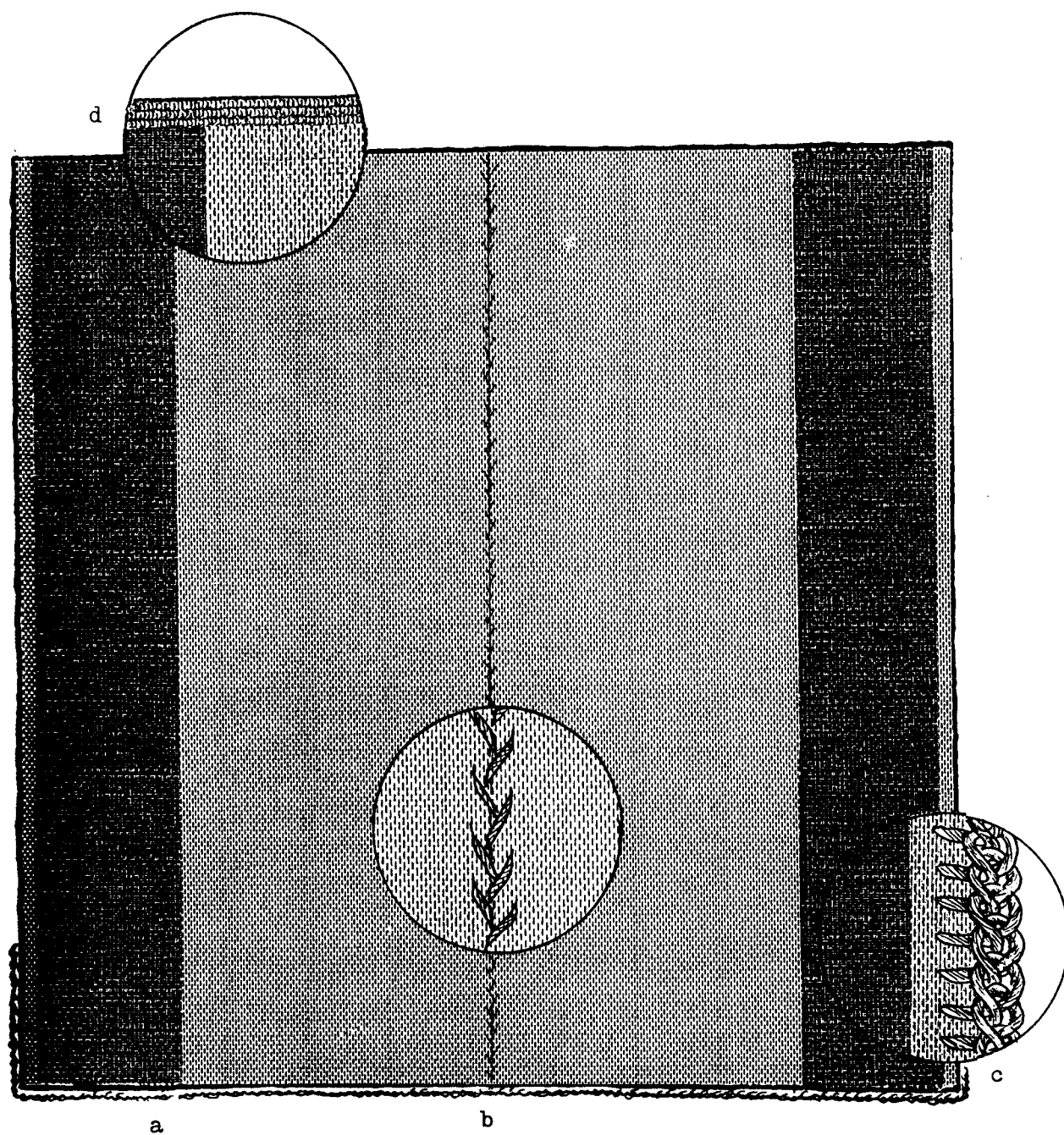


Figure 2. A large, finished *manta*. (a) The *manta* proper. (b) The central seam, fish bone stitch. (c) The edge binding, cross-knit loop stitch. (d) The heading cord.

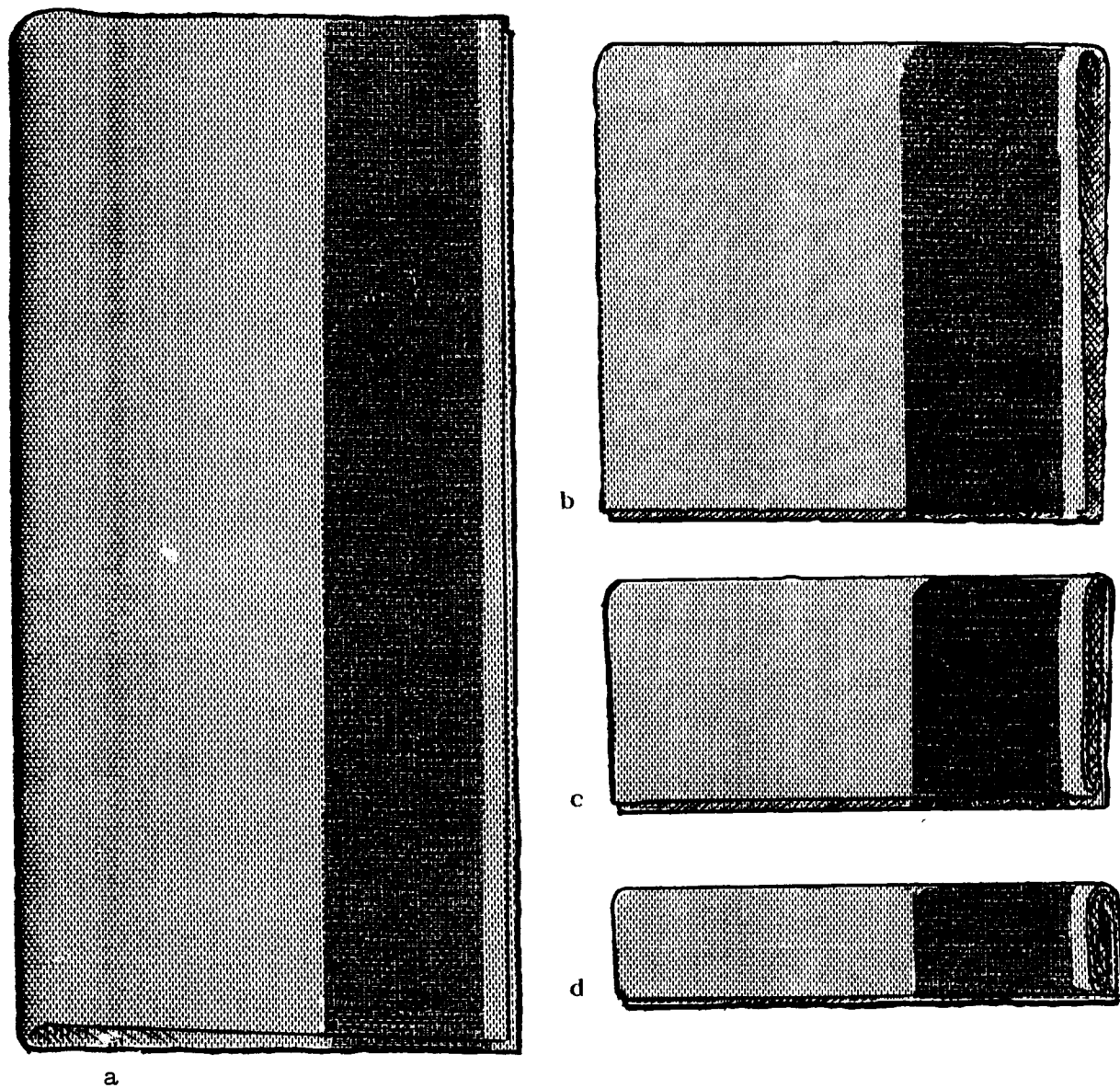


Figure 3. The folding sequence of a large *manta*. (a) The placement of the panels on top of one another. (b) The first fold width-wise. (c) The second fold. (d) The third fold.



Figure 4. Example 17. (a) (*this page*) The remaining fragments of the finished *manta*. (b) (*next page, top*) The central seam, fish bone stitch. (c) (*next page, bottom*) The edge binding, cross-knit loop stitch.

Figure 5. (*page 160*) Eduardo Montoya (left) and Francis A. Riddell (right) examine the Rodadero cache as it was found.

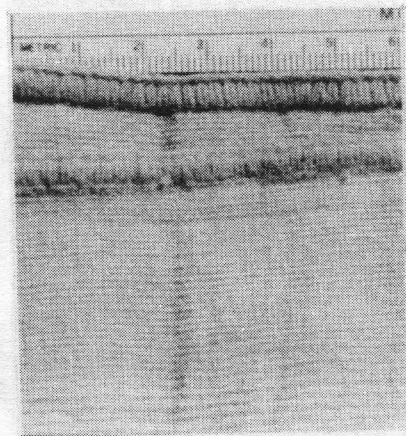
Figure 6. (*page 161*) Examples 8a and 8b, a pair of large panels basted together.

Figure 7. (*page 162*) Examples 3a and 3b, a pair of large panels separated at the top.

Figure 8. (*page 163*) Examples 35a and 35b, a pair of large panels.

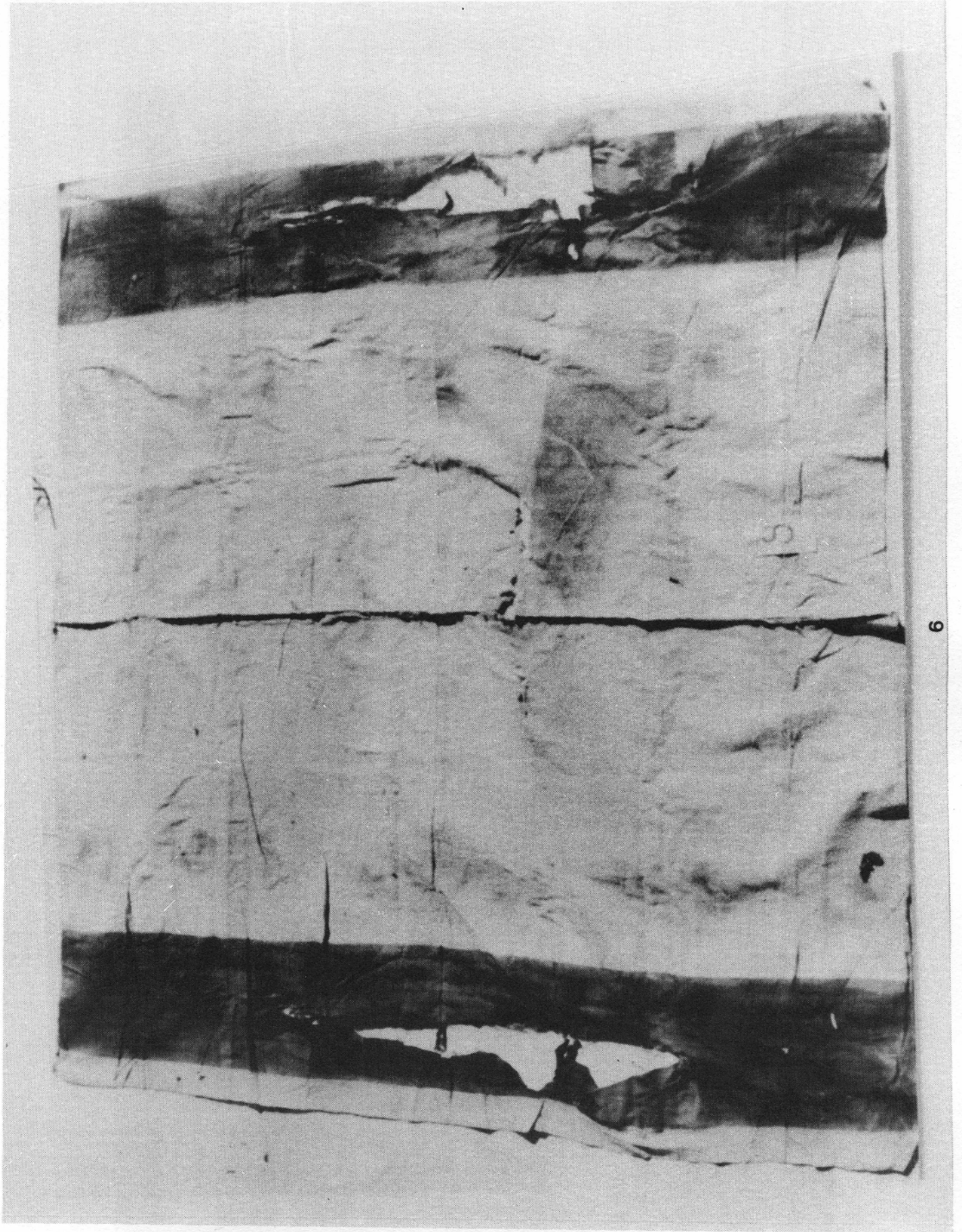


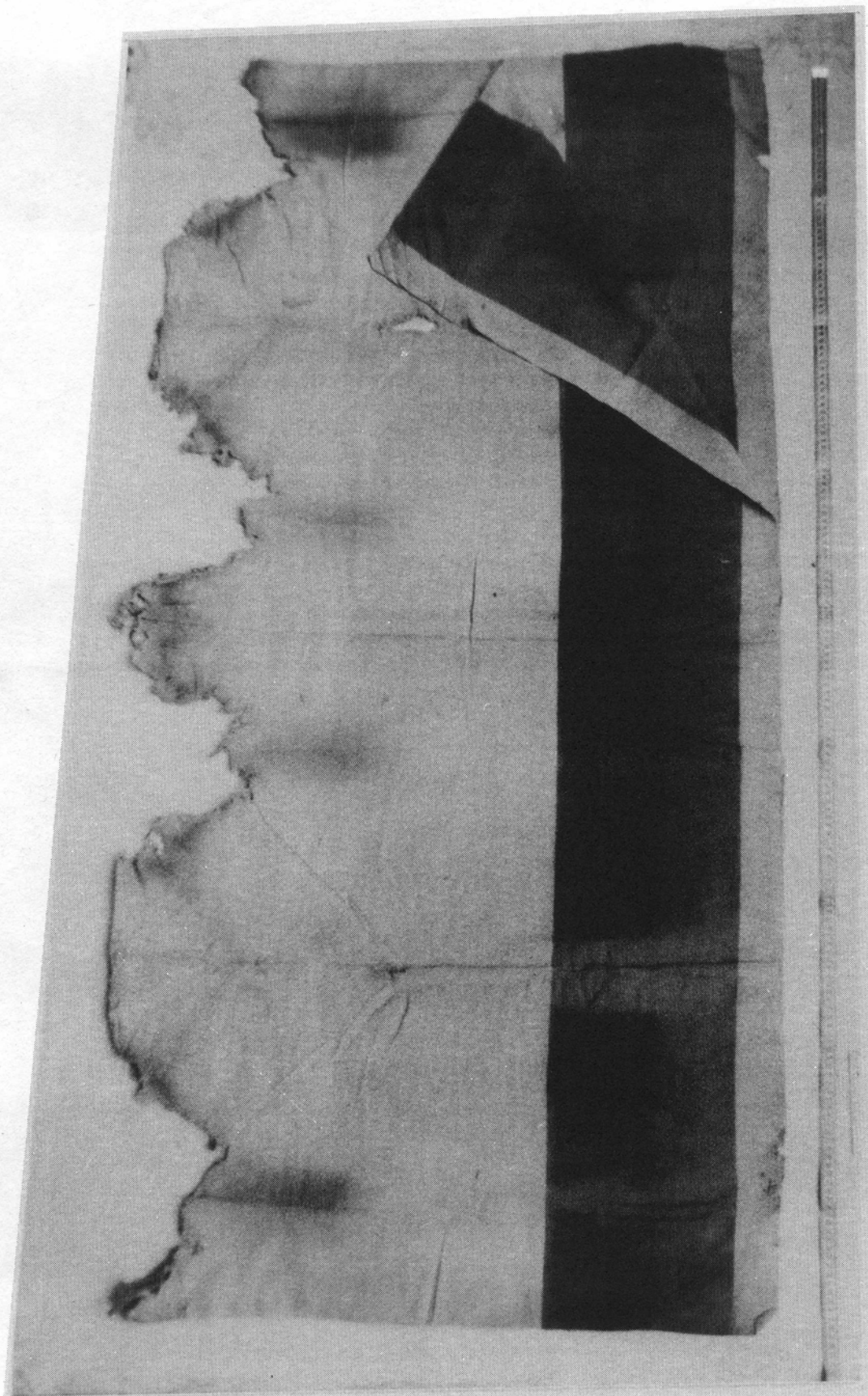
4b

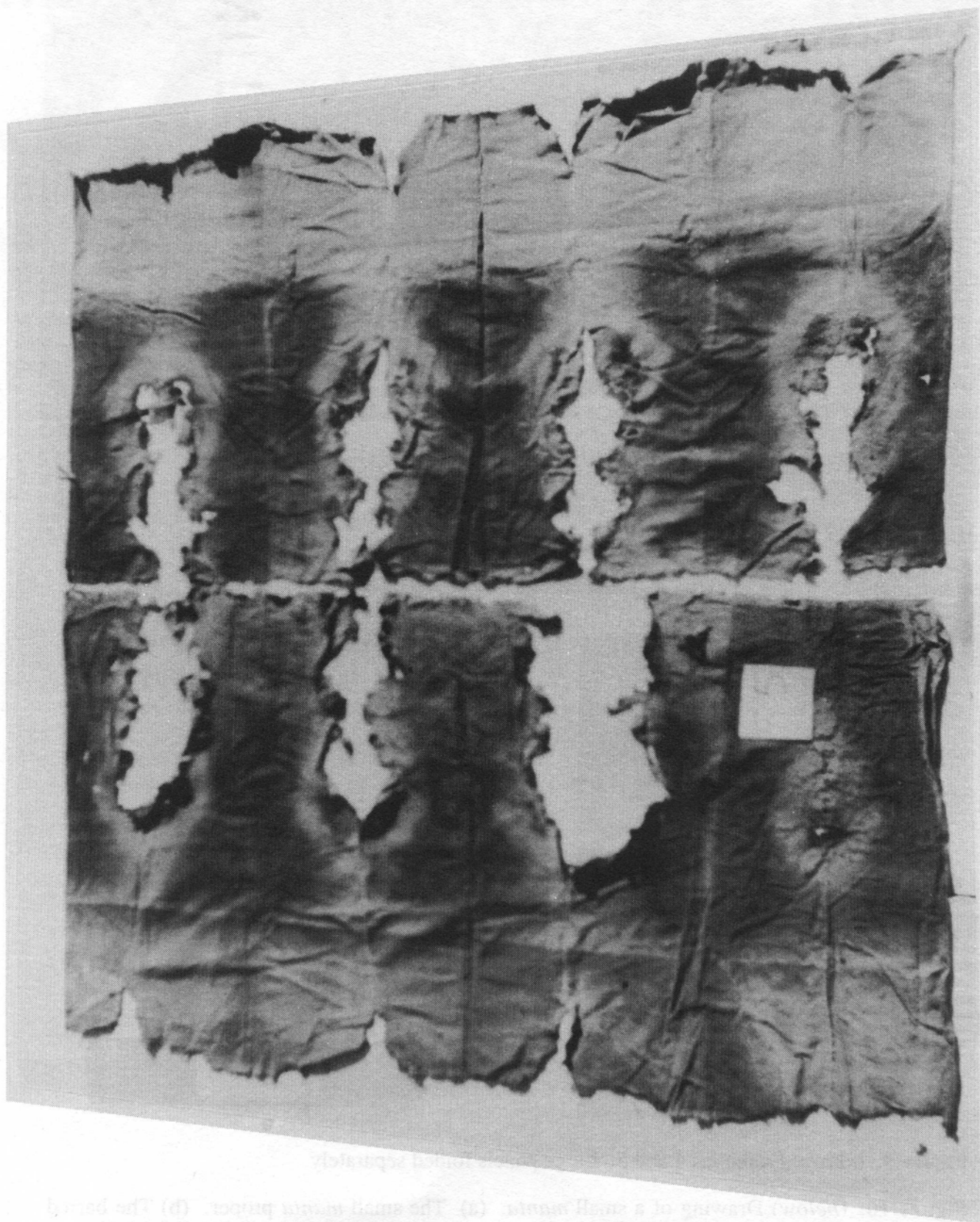


4c









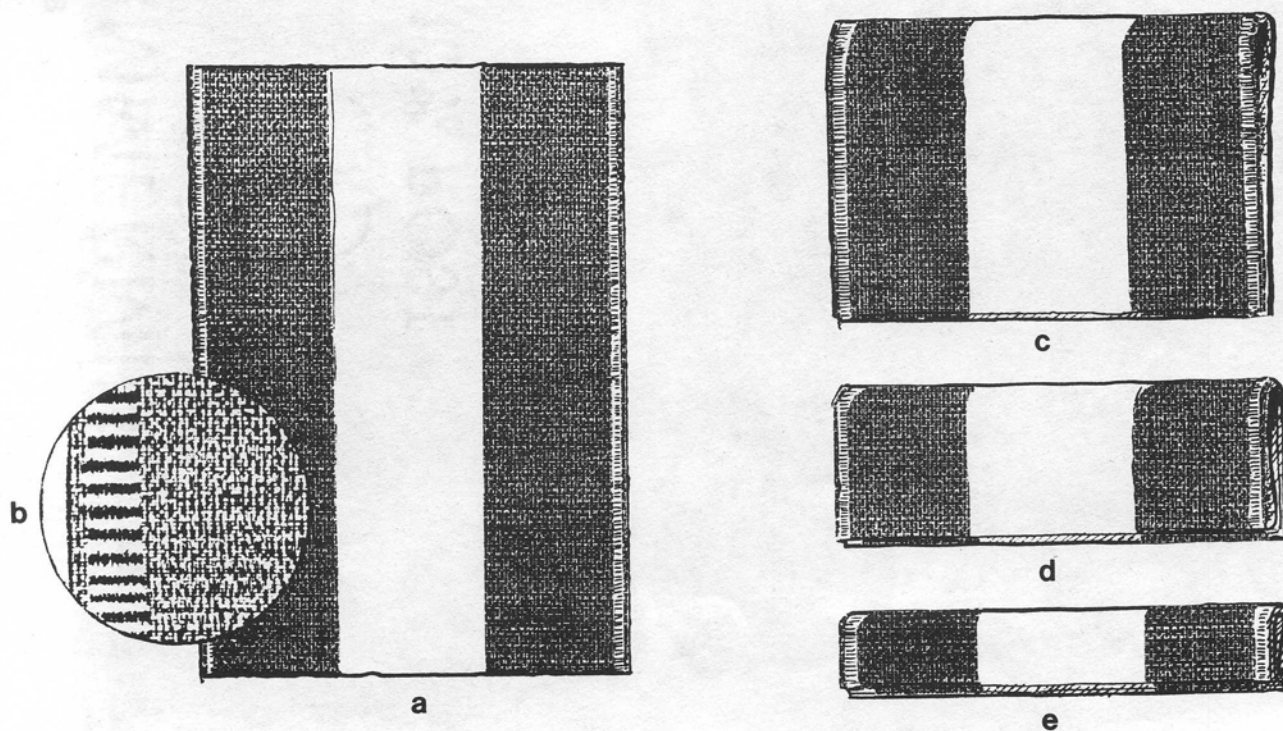
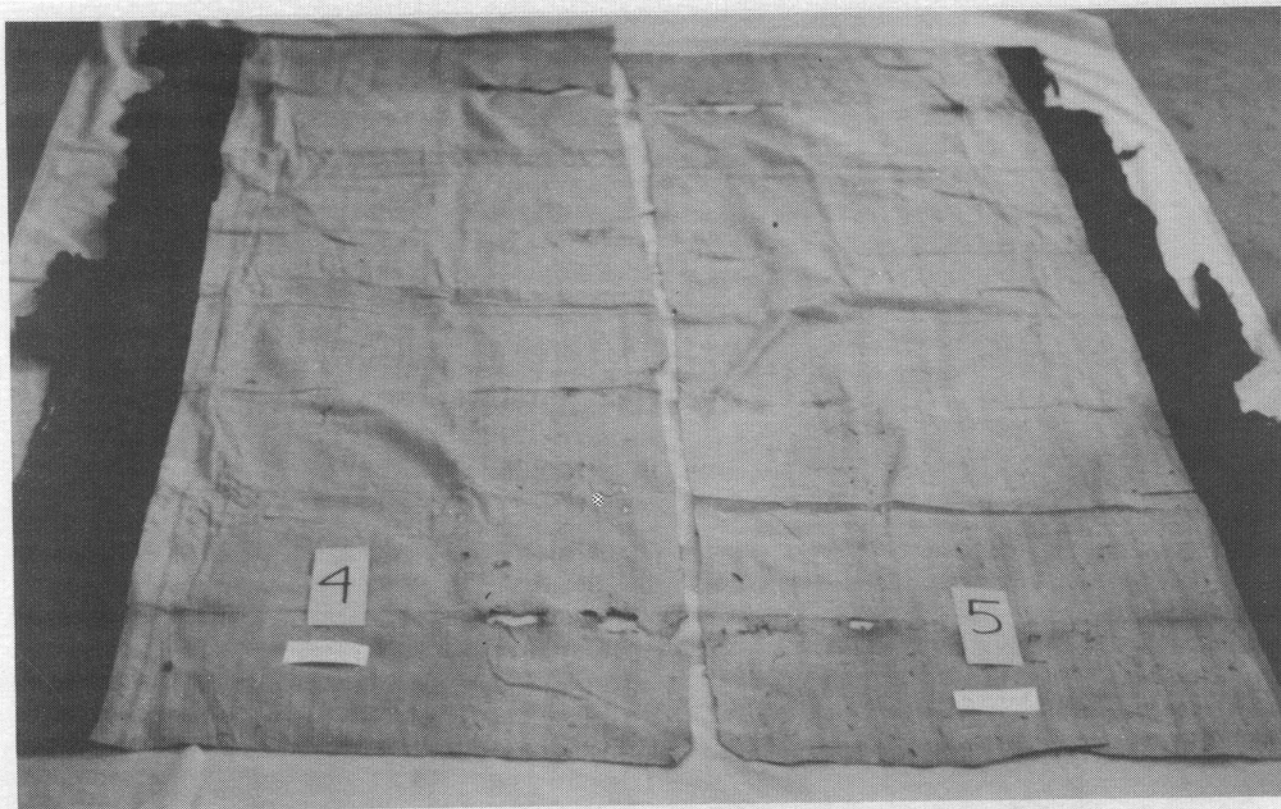


Figure 9. (above) Examples 4 and 5. Large panels folded separately.

Figure 10. (below) Drawing of a small *manta*. (a) The small *manta* proper. (b) The barred stripe along the edges. (c) The first fold width-wise. (d) The second fold. (e) The third fold.

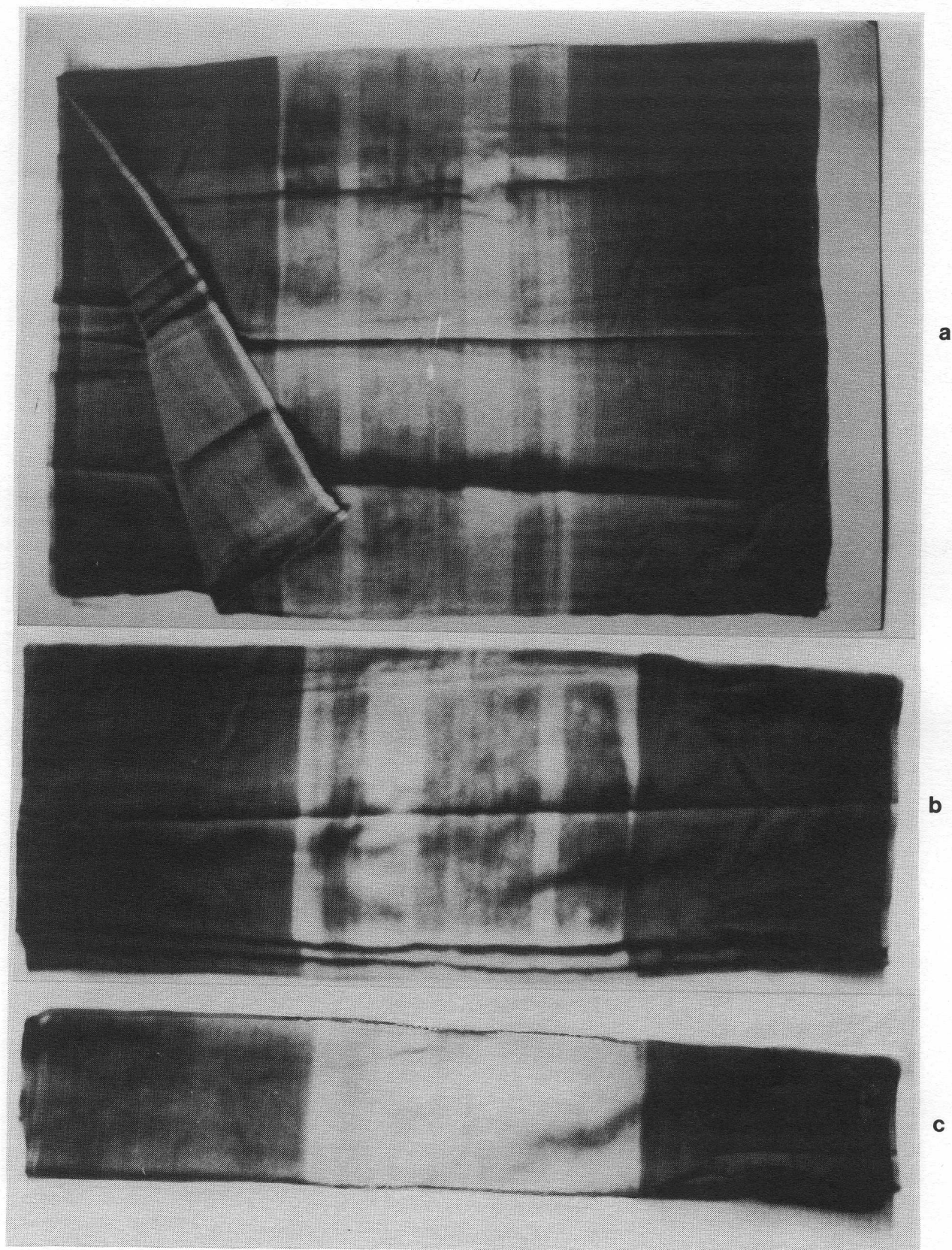


Figure 11. Photo of the folding sequence of a small *manta*. (a) The first fold width-wise. (b) The second fold. (c) The third fold.

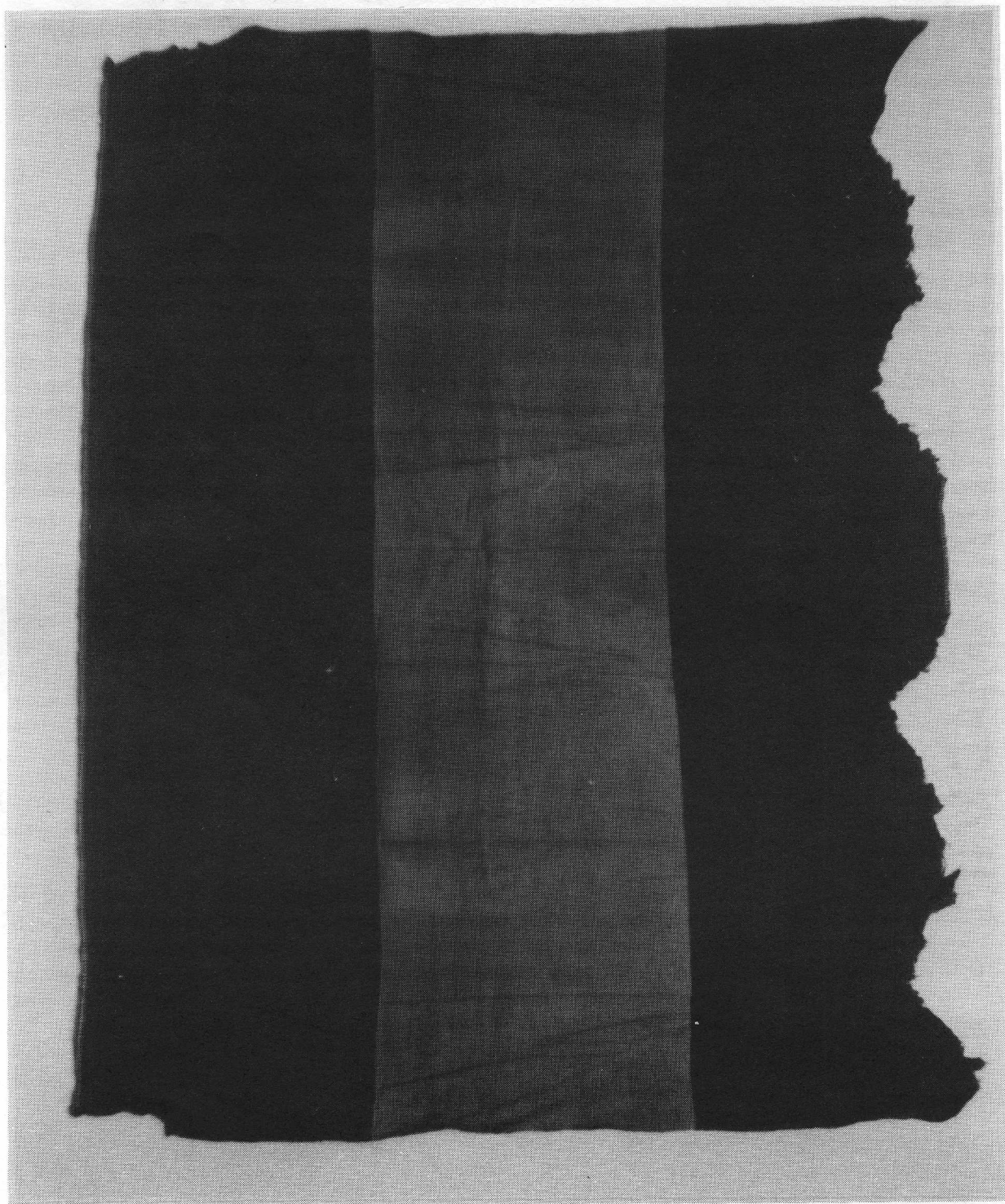


Figure 12. Example 6, a small *manta*.

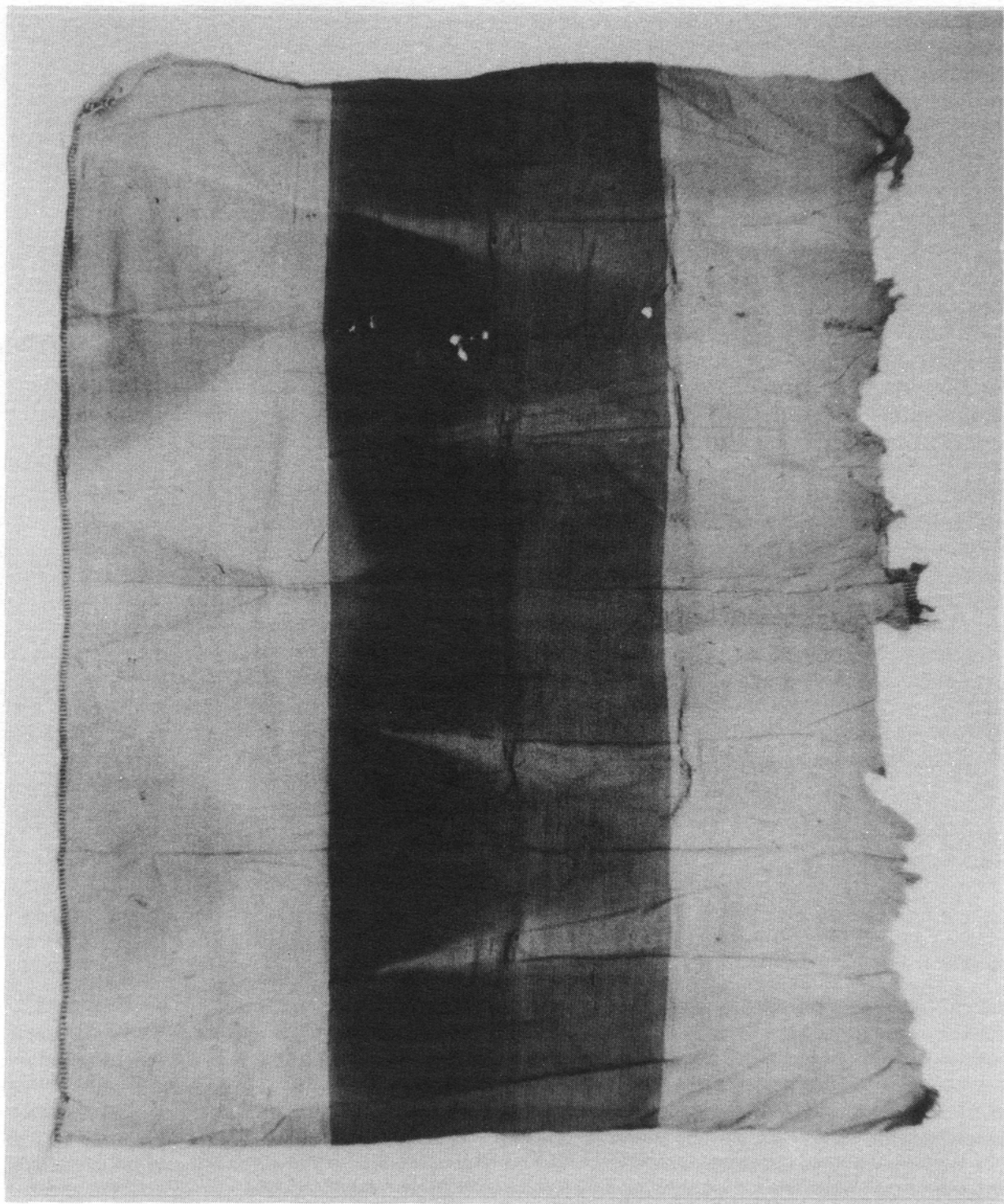


Figure 13. Example 10, a small *manta*.