

A CONTEMPORARY PERUVIAN WEAVING TECHNIQUE ON THE CONTINUOUS WARP LOOM:  
LEARNING AND INSTRUCTION IN A NON LITERATE SOCIETY.

by

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# ABSTRACT

The first chapters of this thesis provide a brief survey to establish the antiquity of the Peruvian textile tradition. The development of this tradition, using the most rudimentary of equipment, the continuous warp loom, is traced from its beginnings millennia ago, to the Spanish conquest in the fifteenth century, which disruption of the established pattern of life resulted in the loss of many sophisticated textile techniques. The continuation of the warp-pattern weaves results from their position as peasant weaving techniques, in contradistinction to the other techniques which were used in the production of status textiles. The versatility of the continuous warp loom is shown, with reference to prehistoric models and early Spanish literature, followed by a discussion of contemporary loom set ups, observed during field work in Peru in 1978. A later chapter provides detailed descriptions of spinning, warping and weaving techniques observed in the Cuzco region of Peru. The weaving descriptions include finger weaving techniques in the production of narrow and wide bands, and loom weaving of wide cloth, using a variety of loom set ups. The thesis concludes with a description of how the Peruvian weavers transmit their knowledge, as experienced by the researcher, who participated in this culture transmission by learning to weave while in Peru, and the effects of the learning process on the evolution of designs in the textiles.

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## CHAPTER 1

### INTRODUCTION

Within the last century, as a result of the efforts of many dedicated collectors and archeologists, a considerable amount of pre-Columbian textiles has been recovered, preserved in museums throughout the world. This material is available for study and it has stimulated much of the work of this thesis. Recent examination of this material has aroused extraordinary interest because of the sophisticated development of some of the designs, and also, because of the complexity and diversity of the techniques which were used to create the fabrics themselves. A few of these techniques are still in use in contemporary Peruvian weaving.

Archeological and historical evidence shows that the early textiles were produced on very rudimentary equipment. The looms that were used consist of a few simple wooden elements. It is with these looms and the textiles produced on them, that this thesis is concerned.

The first part of this thesis is devoted to the development of the textile tradition in prehistoric times, from an examination of pre-Columbian fragments and information in a range of relevant literature. A considerable number of structural analyses have been made of textile techniques which were used in the production of prehistoric textiles. This has added greatly to the knowledge of the versatility of the simple loom. Field studies were made by this

researcher into contemporary weaving techniques to determine precisely how the warp and weft were manipulated to create the fabrics. But it seems that little work has been done yet to relate prehistoric techniques to the looms on which they were worked, so that present day weavers could produce textiles using the same weaves that were developed by pre-Columbian Indians of Peru. Equally little work has been done to relate the contemporary textile tradition to its prehistoric origins.

The second part of the thesis consists of a detailed examination of contemporary weaving techniques used in the Cuzco region of Peru. From the data gathered during a detailed examination of the weaving process it is hoped to provide a store of practical knowledge on weaving techniques. It is also intended to direct the attention of present day weavers to the fascinating possibilities which could arise from the use of the continuous warp loom.

Descriptions have been included of weaving on full-sized looms to provide as complete a picture as possible of the weaving process, although the main interest has been in the warp preparation and weaving of belts and bands using finger weaving techniques. These techniques which do not seem to have been reported in detail elsewhere in the literature, function both as an end in themselves and as a technical vehicle. By these means, not only may belts, bands and edgings be produced but, in miniature, techniques and patterns may be learned more easily than on a large piece.



For practical reasons the work in this thesis has been limited to a description of one technique only: complementary-warp weave. The two weavers with whom most time was spent, used this weave structure in the demonstration bands which they wove. Also the time factor set a definite limitation with regard to the size of the pieces which could be thus made. Equally, although descriptions are given of weaving on full size looms for comparative purposes, it is with the narrow bands that I am most concerned. But it is important that a balanced picture is given of the contemporary tradition which has grown out of the prehistoric past.

The third part of the thesis deals with the learning process. I spent significant periods of time with Indian weavers, during which I was given lessons on their weaving techniques and methods. It was this work that made it possible for me to continue weaving after the end of the work in South America. Through this learning experience I was provided with an unique opportunity to study the transmission of a cultural tradition, continuous warp weaving, in a non literate society.

## Description of Area of Research in Peru

Research for this thesis was carried out in the Department of Cuzco, in the Andean altiplano, or high plateau area, between the two cordillera that form the Andean mountain chain. The Indian people of this region are Quechua speakers and Spanish is spoken by many of them as a second language. Some of them, those who live in the more isolated villages, many of which are accessible only by a narrow foot trail, speak little or no Spanish. To the south towards Lake Titicaca, and in Bolivia, live the Aymara speakers. The Aymara are the descendants of the Colla, one of the four great groups that the Inca, the original Quechua speakers, partially subdued not long before the arrival of the Spaniards. Due to the long period of cross cultural influence, and the further overlay of Spanish influences, it is not possible to say whether certain weaving styles or loom set ups are of Quechua or Aymara origin. The picture has become too confused. However, in both Peru and Bolivia, there is still an active tradition of weaving on back tensioned and staked out looms. Although the designs produced are different, and they vary from village to village, as well as from country to country, the weave structures and the loom set ups that are used are the same.

Despite the increasing breakdown of traditional life, many of the villagers in the altiplano still live in a manner that is relatively unchanged from Inca times. Many of the women wore traditional Indian dress, consisting of a treadle loom woven skirt, embroidered

jacket, traditional hat and hand woven, patterned manta, which is wrapped around the shoulders and pinned at the front. All goods are carried on the back, in a hand woven, patterned carrying cloth that the women still weave. Many go barefoot, although some wear slip-on sandals, made from used automobile tires. Fewer men wear the traditional Indian costume. All men wear a poncho and knitted cap for warmth. Occasionally, a man will also be seen in the traditional treadle loom woven pants, which end just below the knee, and an embroidered jacket similar to that worn by the women.

Clothing is essential in the altiplano as protection against the climate, which is cold and windy. The fabrics must be tightly packed to keep out the wind and the rain, during the months of long rainy season. Since the manufacture of each garment is a lengthy process that must be fitted in between other essential and backbreaking chores, the finished garment must be durable and hardwearing, so that it need not be replaced for many years.

In the markets there are two distinct areas. One area is laid out with proper stalls, and these are covered in ceramics, textiles and other handicrafts that have proved popular with tourists. The other section, seemingly separated by an invisible line, is where the local people spread out their wares on the ground. They sell or barter bread, peppers, potatoes, beans, a few eggs and anything else that they have produced. They form a very tight knit group and may refuse to sell to outsiders, who could easily buy up the

entire supply and leave nothing for the regular customers. We found this in Pisac, where we tried to buy some eggs and other provisions for a camping trip. The same thing happened again later in Ollantaytambo, although there we were buying from little stores rather than in an open air market.

Life on the puna, the highest plateau areas that are inhabited, up to 15,000 feet altitude, is a constant, harsh battle for survival. The climate and the altitude combine to reduce daily life to certain stark essentials, balanced on a knife edge, close to disease and malnutrition. Even with improved medical care and hygienic advice the infant mortality rate is still alarmingly high.

Weavers were observed in several villages as shown on the map (fig. 3). Access to the various villages was made by bus, train truck or private car. The last method of transportation was used to get to Tinta, since there was not the time to spend one or two nights there, which would have been necessary if local transportation had been used. Senora Octavia Sinchi, a weaver in her early thirties, was from an isolated village. She had walked into the town of Ollantaytambo, where she was observed. She stayed for two days, during which time she demonstrated weaving on the back tension loom as well as preparing and weaving parts of several narrow bands. She spoke very little Spanish, making communication difficult. In order to observe her weaving for the two days that she stayed I employed her, and paid her two days wages, plus the cost of the materials that

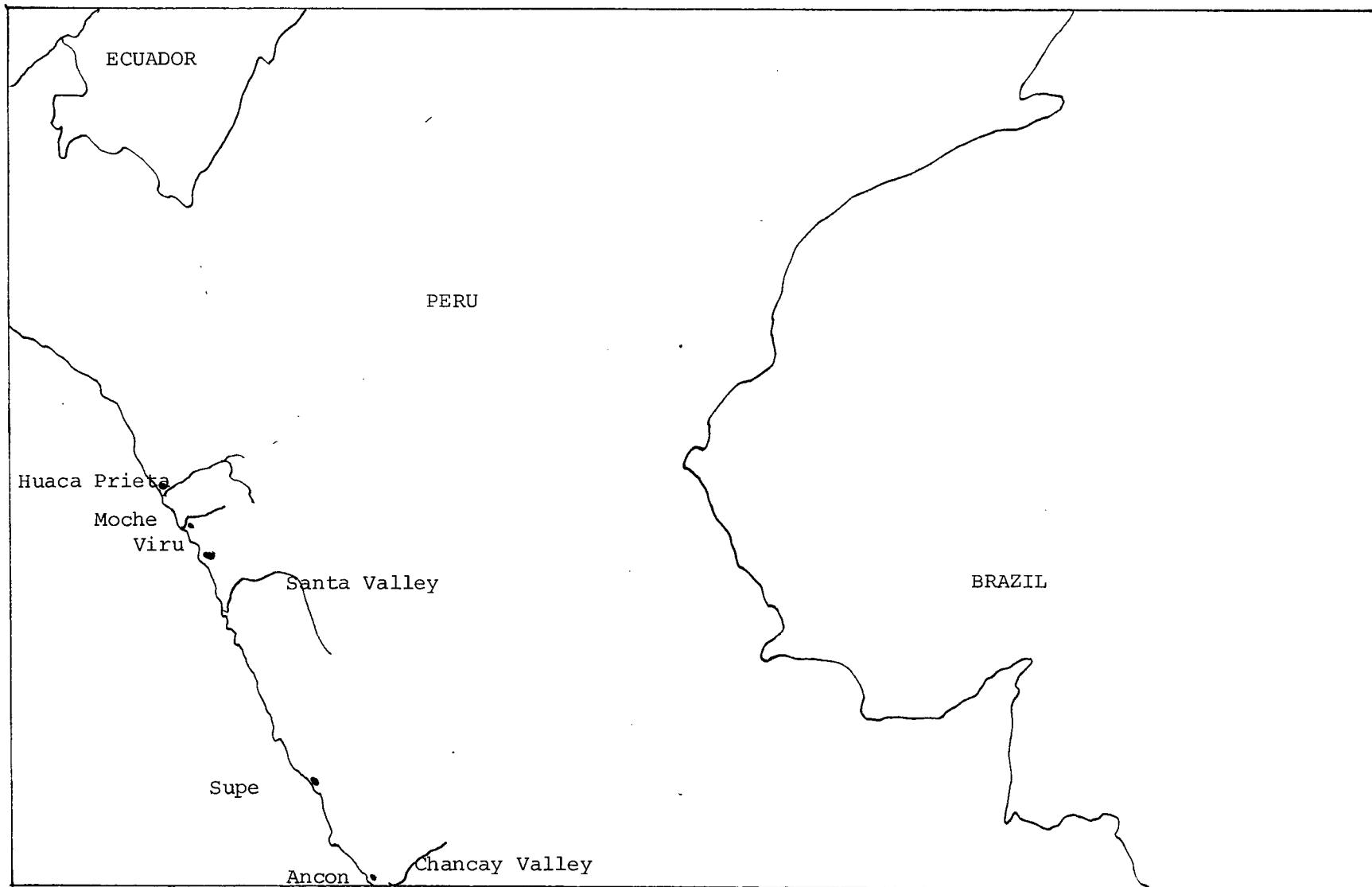
she used for the sample bands which she left with me. We negotiated the wages and other costs that she charged me. Such is the difference in the cost of living there that I paid her only a few dollars for two days of her time.

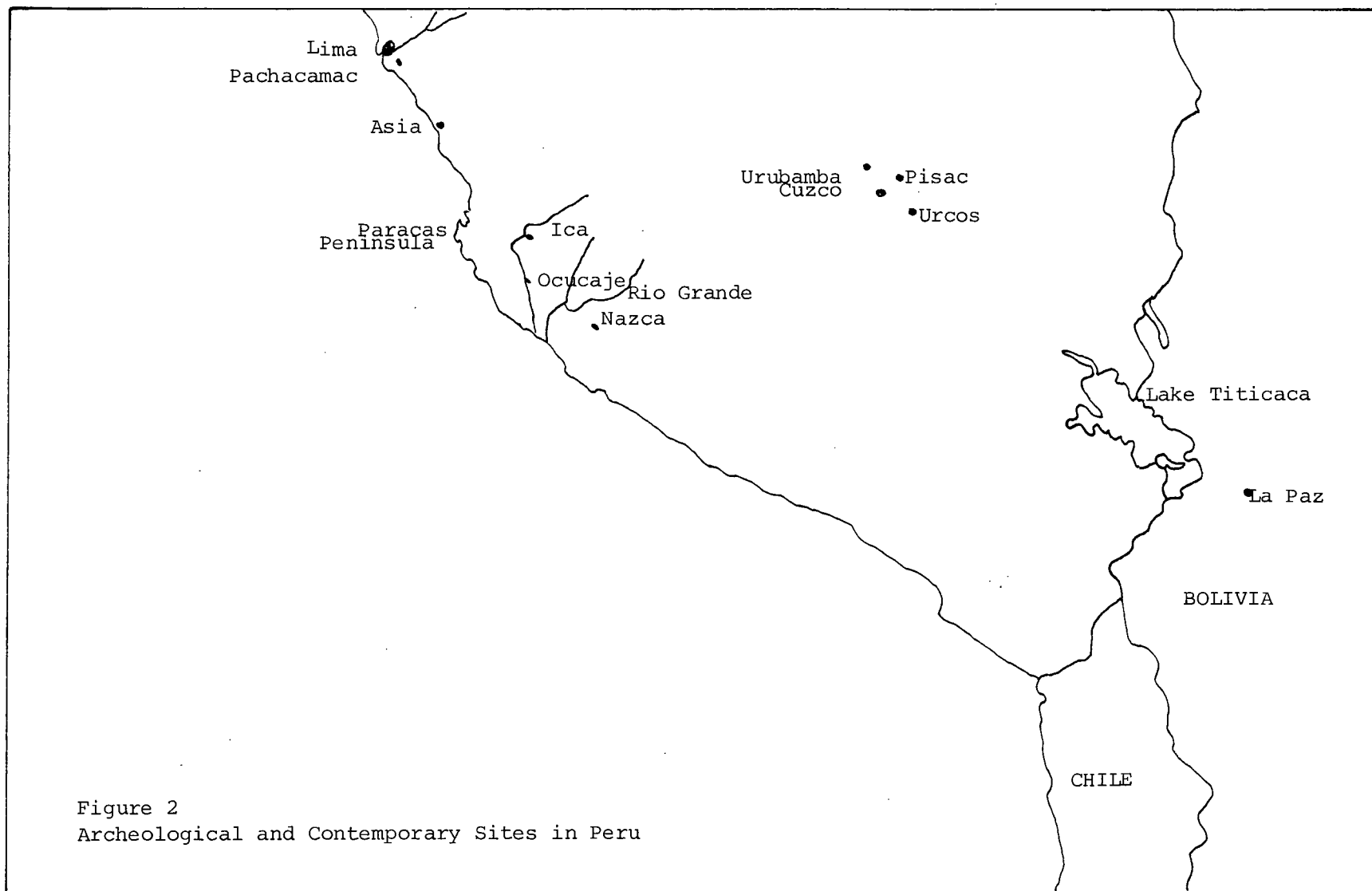
When I observed Stefania Quispe in Chinchero, I did not pay her directly for her time but rather bought the bands that she was working on while I observed her. I also paid her for my board and lodging for the three days that I stayed with her. Similarly, goods were purchased from the other two weavers observed, Gerardo Gusman in Tinta, and the unknown woman at Sacsahuaman.



Figure 1

South America







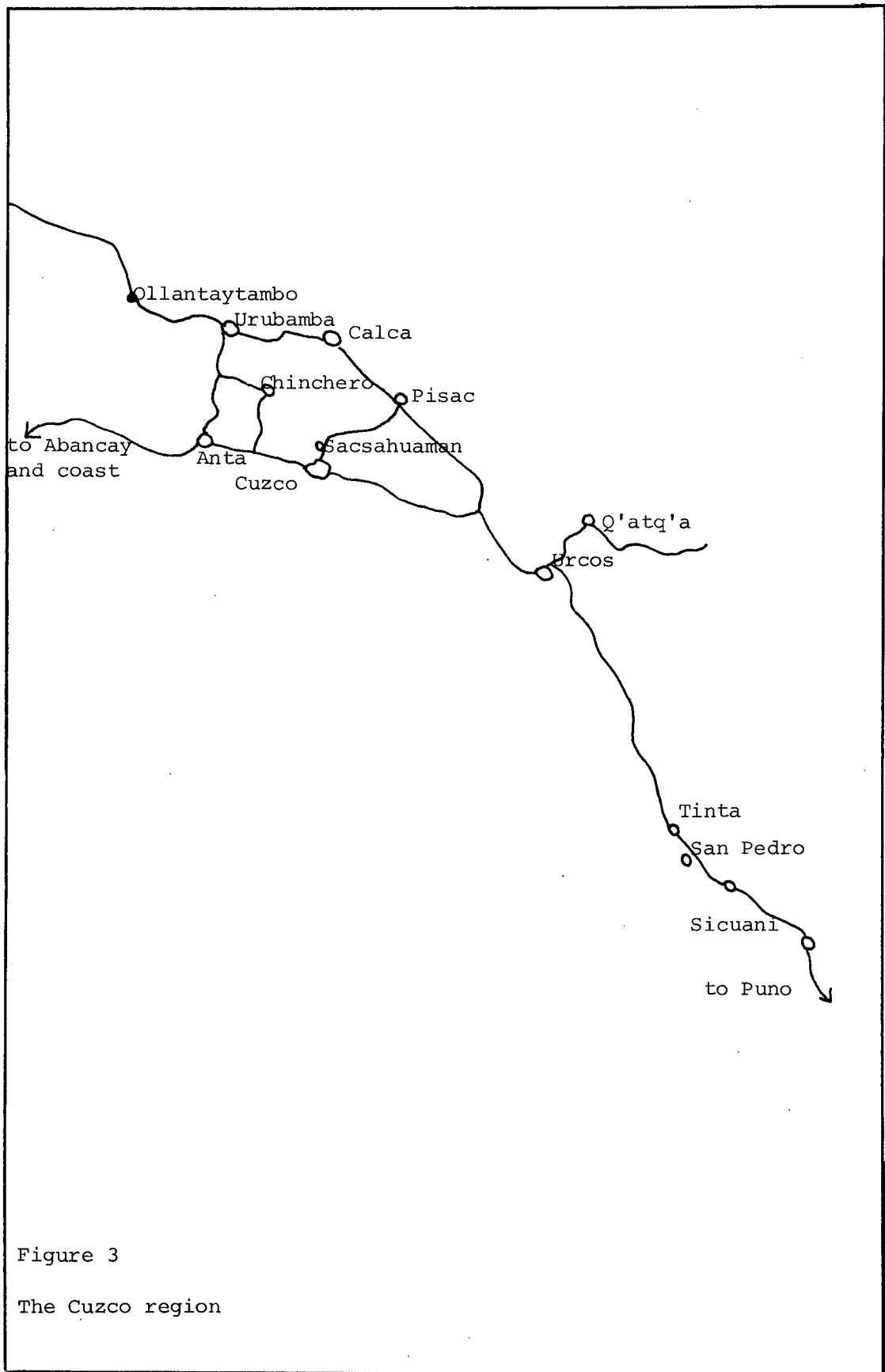


Figure 3

The Cuzco region

## CHAPTER 2

### THE ANDEAN WEAVER: PAST AND PRESENT

The standard picture of the Andean peasant woman is of a person who is always busy with her hands. If the woman is sitting anywhere and not working, then she has some yarn and a drop spindle. She spins constantly, whether at home or in the market, watching over the small piles of vegetables that she has come to barter or sell. On her way to that same market, laden down with a baby and goods tied on her back, she will spin as she walks briskly along. The implication in this picture is that spinning and weaving are numbered among the women's arts. In practice this is not necessarily so.

In pre-conquest times, under the Inca rule, there was a complicated system of reciprocal duties. As Murra expresses it (1962: 715) one of the two main economic obligations which each individual had to the state, was the supply of woven cloth, but in return, the state guaranteed a supply of fibres to each peasant family for its needs.

Fibre to weave cloth for crown and church	↔	right to wool and cotton from community stocks for own clothing
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This exchange of fibres in return for making up a certain quota of fabric was in addition to any fibres, whether of alpaca or cotton, to which the peasant might have access through ayllu (clan) crops or herds and occasional barter.

It is implied in the chronicles that the labour level set by the state was based on the size of a man's family and therefore the goods received in return were also based on the assessed needs of the family. There seems to have been several levels of labour which each family was obliged to carry out. Services were owed to the church and the state, and to the koraka, who held local responsibility to see that all was done as required. Since duties and allowances were based on the size of the family, it required every member of the family to be occupied with some share of the labour. Thus the division of labour was less rigid than it might have been under other circumstances. Boys and girls learnt to spin and weave. While the women were expected to weave clothing and other textiles for the family use, the men who were too old or crippled for mitta labour (work on church and state land), and the children did the spinning and ropemaking. They also wove sacks and other coarse fabrics, depending on their age and ability (Murra: 711). Contemporary research confirms this fact, although the specifics vary from region to region. More will be said later of this modern differentiation of task.

Early references in the Spanish chronicles differ as to exactly how many woven pieces were required of each peasant family, but certainly one garment was woven for the state to a set standard of size and quality. Other articles may have been required by the koraka on the local ayllu level of reciprocity. This quantity of cloth would still have been sufficient to meet only a small part of the imperial and ritual needs. Although all the cloth was doubtless competently wove, no peasant family would have had the time, amongst all the other duties and necessary labour in the fields, to produce cloth of the high quality and fineness of decoration that is the rule rather than the exception with many of the archeological textiles. This type of weaving was carried out by specialists.

Post conquest reports mention vast warehouses packed with bundles of cloth. Even after extensive looting, little impression was made on the overall quantity that had been stored. This cloth was used as payment for the soldiers, as an award indicating increased status for a noble (certain types of textiles were exclusive to certain ranks), as a sign of favour on the part of the Inca, and as a reward for meritorious service. Textiles also played an important part in rituals, being used to clothe idols, decorate shrines, and for destruction by burning as a sacrifice.

In order to produce such a quantity of fine cloth groups had to evolve. J. Rowe mentions gompí-kamayoc, or tapestry weavers (1946: 268). These craftsmen would work fulltime for the emperor who distributed their surplus work as gifts and rewards to the nobility. The weavers were supplied with food and clothing from the empire's warehouses. The control of the women subjects was as arbitrary as that of the men. Girls about ten years of age, who were selected by government officials for outstanding beauty and physical perfection, were placed in convents called aklla-kona, where they were educated. The girls spent four years learning to spin and weave, as well as other household occupations. Some of the women were given as wives to nobles and successful warriors; others were dedicated to the gods and served at temples and shrines; still others were selected as concubines for the Inca, to weave his clothing and prepare his food. One royal garment described by Morúa was so fine that it could be fitted into the hollow of one hand (Murra 1962: 719). All of these women were expected to busy themselves with the production of textiles, whether for church or state.

The principal fibres available to the Peruvians were cotton, and the wool of the camelids: llama, alpaca, huanaco and vicuna. The cotton grew in a wide variety of shades from cream to brown. Using yarns from these fibres the Peruvians made fine, complex textiles, developing techniques that have not been found anywhere else in the world. Some of the finest have a thread count of over three hundred weft threads per inch. Bird states that "some of them rank among the finest fabrics ever produced." (1949: 256).

Cobo (Murra 1962: 711) lists two classes of fabrics. The warp-faced cloth produced by the peasants for their own use, both as blankets and clothing, was called awasqa. It was rather rough, thick and indifferently coloured in comparison with the work of the akla women. The other cloth was kumpi, a much finer and softer fabric woven on a different loom. The weave was smooth and continuous, so fine that no thread ridges could be seen. Kumpi fabrics were so fine that European textiles suffered by comparison. Yet eighteen years later, in 1550, Cieza de Leon speaks of the art of kumpi weaving as being lost (Murra 1962: 711).

With the overthrow of the Inca empire and the complete disintegration of the system of government, there was no one to oversee the production of cloth by the gompikamayoc and the aklla-kona. As a natural consequence the specialized types of weaving, which required great skill, died out and all that remained of the native tradition was the peasant weaving. Although there must still have been many weavers, even among the peasants, who were capable of real virtuosity in the practice of their craft, there was no demand for fine cloth. Instead, all weaving was to produce clothing for the family, with perhaps a little extra that could be traded for yarn and foodstuffs that could not be grown locally.

After the conquest alpaca yarns continued to be prized for woven narrow scarves, knitted caps and sweaters, and as a weft in some of the ponchos, but sheep wool, introduced by the Spanish, became most common. Until recently much of the handwoven garments produced in the highlands were made of sheep's wool. The old, natural dyes that were first used on the camelid fibres and then on wool, have been replaced by commercial, aniline dyes, bought in powdered form at all the native markets.

The warp-faced weaves that are still to be found in the highland villages, are woven from a very tightly twisted yarn. This makes them very hardwearing, and virtually rainproof. Whereas in the past alpaca would have been used for the ponchos and mantas that some of the campesinos<sup>1</sup> still wear, nowadays wool is the predominant fibre, with the synthetic yarns which have become more popular. Where llama fleece is spun it is used to weave the large sacks that are used to store the local produce and to transport it to market, either by burro or truck.

In addition, synthetic "orlon" yarns are used, alone or in combination with wool, for mantas, ponchos and carrying cloths. The yarn is bought in the market in commercially spun skeins. These skeins are then overspun, using the drop spindle, to give the yarn a tighter twist and make it more hardwearing. The yarn is then warped up in the traditional manner and woven. The colours of the synthetic yarns are harsher and brighter, and do not soften and fade as the garment ages. While some

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<sup>1</sup> Spanish name for the Indian peasants

garments are woven entirely of synthetic yarn, many others have only a few plain stripes or pattern bands of synthetic yarn, as in the hacien-dado style of brown striped ponchos

The patterns woven into the garments that are made on the continuous warp loom are traditional in the sense that they belong to a village or region. The local populace can identify where articles come from, by their designs. Some of these designs have been found on archeological textiles, but many of them are instead influenced by colonial Spanish weaving. An obvious example is the flower or rosas design that adorns the Tinta poncho and uncuna (carrying cloth). Another example, often found on belts, or as motif, representing a horse and rider. The Peruvians saw their first horsemen when Pizarro and his men arrived.

Although the peasant tradition of cloth making has continued relatively unchanged insofar as the equipment and the weaving technique and the weave structures are concerned, it is now applied only to the making of ponchos, mantas, uncuñas and belts. Other native clothing, which has developed a unique style in imitation of earlier Spanish models, is woven instead on a home built treadle loom, based on those introduced by the Spanish. On this loom the men weave a plain weave woollen cloth about twenty inches wide. The cloth is known by its Spanish name of bayeta. The thread, always single ply, and often hand spun, is traditionally dyed black before weaving. It is used to make skirts for the women and pants for the men. A natural, dirty white cloth is woven for waistcoats and jackets for men and women, and as underpant material for the men. A variant of this material, used for men's suiting, in imitation

of European styles, is woven in a black and white twill weave. Photographs taken by the Bingham expedition in 1910 (Ferris 1916) show Cusquenos (the men of Cuzco), wearing pants and waistcoats of this material. All of these materials are available by the yard in markets in the major cities.

A more recent development has been the factory, commercial weaving industry, which produces a finer quality of twill weave, woollen cloth from commercially spun yarn. This cloth is referred to as bayetilla (literally little bayeta). Whether woven on a continuous warp loom, atreadle loom or in a commercial factory, each cloth has its place in the traditional costume of the campesino.

Traditionally only men weave on the treadle loom. Stevenson, in his study of the area surrounding the community of Santiago de Chocorvos, which stretches along the Ica Valley, from near the coast up into the highland plateau, reports that while the women do all the spinning generally only the men weave. Unless someone in her household is capable of weaving, the woman who has spun the yarn, takes it to the local weaver, who may also double as a curer. This is especially the case in the more isolated villages which lack enough people to support a settled craftsman weaver. In some households where the women do weave it is only small articles such as belts and children's ponchos (1974:8). The local folk tradition holds that in preconquest times both men and women did weave.

From the Cuzco region, Goodell (1968:6) reports that men, women and children spin while walking along with heavy loads on their backs, but



she also remarks that in all but the most isolated villages the spinning is left to the women. The relegation of spinning to the women seems even more marked now than it was a few years ago. The men are now ashamed to be seen spinning in public. In my travels through some of the same area ten years later, I saw no men spinning. Goodell further comments that the plying of the yarn is still considered to be men's work, although no woman would hesitate to ply the yarn when it needed doing. This division of labour may relate to the pre-conquest task of rope and yarn making by the old men and the cripples.

Very few women were observed spinning whether in the towns or in the country, although there must still be a fair number of women spinning somewhere, to produce the quantities of yarn necessary for the handwoven and treadle woven fabrics that are produced. In the village of Chinchero where I stayed for several days the only foreigner there, I saw only two women spinning. It may have been that I was not in the right place at the right time. One of the spinners indicated that her eldest daughter, who was about twelve years old, was the only child learning to weave. Although she did help her mother with the weaving she was not observed to do any spinning.

In contrast with Stevenson, Goodell seems to have encountered only women weavers, some of whom were professionals, while the others wove only for their families. All coped with the distraction of children and household chores during their weaving time. (Bird 1968: 14-5). A. Rowe (1975: 31), who also carried out research in the Cuzco region, came across several male weavers, but reported on a larger number of women than men at work

producing textiles. A woman weaver in Lauramarca, who used a staked out loom said that sometimes the men used a back-tensioned loom, but that women did not, because it gave them backache. A male weaver from Q'atqua when asked about the matter said that he would use a back tension loom when weaving small pieces such as a woman's shawl, but that for larger fabrics such as a man's poncho, he staked out the loom (A. Rowe 1975: 32).

From my own observation near Sacsahuaman I can report on a woman weaver using a diagonally staked out loom. In ollantaytambo, I observed a woman working on a back tensioned loom, while in Tinta I saw a man working on a horizontally staked out loom. In Tinta a family of weavers who were visited briefly all seemed to work on the back tension loom. From this it can be seen that it is difficult to draw any conclusions as to who weaves on which loom set-up. The variations may be regional but as yet insufficient information is available.

The tradition is declining rapidly. One has only to read Goodell's field notes on weavers (Bird 1968: 14-5) to realize this. For example only one child in Chinchero was learning to weave. If further research is not carried out soon there will be no weavers left to study.

Some of the weavers interviewed in the three studies in the Cuzco Region reported that the current demand for textiles had changed. As the villages became more accessible the men began to find work outside the agricultural community, they preferred plain brown or quietly striped ponchos, with very little colour in them, which imitated those of the haciendado and the mestizo more closely and thus carried higher wearer status. In Chinchero I did not see a single man wearing a patterned poncho.

All wore a plain, striped brown one. However, it should be pointed out that this is not a completely new tradition in the area. Many of the Indians photographed by Ferris (1916) in 1910 were wearing plain ponchos. At the time that the expedition passed through, these were all relatively isolated villages. Now even the more isolated villages are exposed to the main stream of Peruvian life. External standards of dress and status are being accepted everywhere to the detriment of the traditional crafts and the centuries old lifestyle.

The higher status appeal of the plainer ponchos reaches the Indian from the mestizo (those of mixed Spanish/Indian blood) whom they copy, just as the mestizos copy the blancos<sup>2</sup>. This change in weaving styles is being encouraged by a developing awareness of time-as-money, a peculiarly modern trait which did not previously apply in a society whose economy operated on an exchange or barter basis. As Stevenson and Goodell both found, a poncho is equivalent to two or perhaps three sheep, which in monetary terms is small payment for the many months of labour that are involved in making one garment. Another factor in the change of approach to weaving has been brought about by the actions of the dealers, especially those from Cuzco, itself. They travel round the outlying villages, looking for old and new textiles that they can sell to the tourists. Once they have obtained these textiles, they then visit the larger Indian markets, where they set up stalls and set their prices for the tourist trade.

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<sup>2</sup> Not necessarily meaning pureblooded Spanish, but rather someone who is in a job where he has people under him.

One of the offshoots of the sale of textiles to the tourists has been the manufacture of large tapestry rugs, woven on large upright looms which fill the house in which they are built. Many are woven on commission from a dealer or entrepreneur, who pays a fixed and very small price for each article. Generally the whole family is involved in the business. Although skillfully woven many of these blankets are utterly grotesque. Garishly colored motifs, taken from archeological artefacts few of which are even textiles, are isolated in the middle of a large, plain grey field. Few of the pieces show a little more awareness of design aesthetics. These stand out by comparison and generally also command higher prices.

From the above discussion it can be seen that the picture of the Andean woman as the weaver is not entirely correct. The women do spin and weave, and in many communities what used to be a shared activity is more and more women's work. But in other areas, such as the commercial field, weaving is very much men's work. Only the men operate the looms which produce narrow yardage. In some families weaving is still a family occupation and this is particularly true in the families where income is drawn from the weaving of large blankets and hangings. But despite the new tourist support, many of the people who would have been active in weaving a few years ago no longer are. While at Aguas Calientes, the station before that of Machu Picchu, I even found a policeman who used to weave, but had not done so in years.

## CHAPTER 3

### THE ANDEAN LOOM

#### A. Description

Throughout the entire tradition of textile production a continuous warp loom has been used for the making of material. Initially it must have lacked any kind of heddles or heddle strings, which made weaving on the simple stick set up no less slow and tedious than the other textile techniques used by the ancient Peruvians in the pre-Ceramic periods and later. These techniques included braiding, netting, knotting and sprang, a form of fixed warp plaiting. With the invention of heddles, which Bird (1952:45) hypothesizes at about 1200 B.C., the loom became a viable technical tool, which speeded up the production of fabric, and showed the advantages of woven materials over those made by other methods.

This loom developed early in the weaving tradition and appears to remain virtually unchanged to this day. Examples of looms found in graves which date back more than two thousand years, are identical to today's looms. Each loom still consists of two or possibly three warp or cloth beams, onto which the woven material is wound. There are also a number of pattern or shed sticks, a shed rod, and heddle strings, usually attached to a heddle stick. The basic loom may be used with a backstrap, or staked out on four posts stuck into the ground. The width limit on a back tension loom is about thirty inches,

depending upon the individual weaver's arm length. Wider pieces could be woven on a frame loom. Cason (1976:25) shows a Quechua woman weaving on a loom which is propped up against a wall of the courtyard. This weaver is working today in Bolivia. The actual threading up of the loom does not vary, despite the fact that some of the techniques require more than one set of heddles.

Most of the looms found in the prehistoric burials are small. They seem almost to be weaver's sample looms, although this is not necessarily the case, since they do accompany a body in burial. One of the few surviving, full-size loom, described briefly by Stothert (1979:14) dates to the 15th century. A mummy bundle, which was wrapped with several layers of cloth, was secured at one stage with ropes which were attached to four sticks, one of which can be clearly identified as a weaver's batten or sword beater. There are three other sticks attached to the bundle and these are likely to be other parts of a loom.

There are several explanations for the lack of full size archeological loom parts reported in the literature. If they are not closely associated with textiles or yarns they might easily be assumed to be sticks of unknown function, that had been incorporated in the burial. Since many of the textile pieces that are available for study, have been found by looters, there is the additional possibility that any loom sticks might have been discarded as being of no value. Further it is possible that with wood so scarce, and good weaving equipment highly prized, the looms may have been passed

on from mother to daughter. This practice continues to this day in the highlands. Several of the weavers to whom I spoke said that they would never sell their looms. The parts were well worn in by use and were familiar to the weaver. One weaver said that the loom that she was using had been her mother's loom.

Archeological illustrations and models of looms are also known. The earliest illustration is on a Moche<sup>1</sup>V or V painted vase, dated to about A.D. 500, in the collection of the British Museum. On the inner rim of the ceramic are painted a series of scenes which include eight figures sitting on the ground. These people are weaving on back tension looms. Each of the weavers seems to be working on a different tapestry or brocaded design, which is painted on the wall beside the figure. None of the looms illustrated is shown with heddle sticks, but this does not necessarily mean that none were used at any time. Looms dating from far earlier have been found with the remains of heddle strings still attached to the warp threads. O'Neale (1946: plate 6) describes a fragment of a textile, also Moche, which is in twill weave, suggesting the use of multiple heddles on the one loom.

A. Rowe (1963:34-7) mentions Chimú models of both X-framed and A-framed looms. In one model from the Chancay Valley (Kidder 1963:84), constructed of vegetable material wrapped around with yarn and then dressed, a weaver is sitting at a A-framed loom which is propped up against a tree. A narrow band of weaving is warped up as a continuous warp and is tied to the end bars so that the finished piece would be four-selvedged. The loom is attached to the frame in such a way that

it would be simple to take the weaving and end bars off the A-frame and continue working with it on a back tension loom. Although in the model the loom has been warped up for a narrow band it could as easily have been warped up for a wider piece of cloth.

In a similar model in the Royal Ontario Museum (fig 4) also from the Chancay Valley, a weaver is working with the loom set up for back tension weaving. The far end of the loom is attached to a stake in the ground. A smaller figure, possibly a child, is watching.

Poma de Ayala (1936) also gives pictures of the back tension loom in use. His drawings are detailed enough to show how the warp is lashed to the end bars, and also the heddle stick, shed rod and pattern sticks in place in the warp (fig 5). This loom is exactly the same as the one still in use today throughout Peru, Bolivia and parts of Ecuador, Colombia and Chile. Although it is a simple piece of equipment some of the most beautiful and complex fabrics in the world were woven on it. Tapestry shirts have been found which have a weft count of over three hundred threads per inch, while many of the gauzes are gossamer fine.

Various types of frame looms or tie-downs (loom attached to four stakes in the ground) must have been used at different times to produce the extremely large rectangles of cloth which have been reported from some of the burials. Kroeber excavated fragments of textiles from a burial at Cahuachi, which O'Neale (1936:215) in her analysis of the pieces found to be parts of one textile. The pieces fitted together to form a rectangle of fabric at least six feet eight inches long, by





Figure 4

Model of weaver from Chancay Valley.

(in the collection or the Royal Ontario Museum, Toronto.)

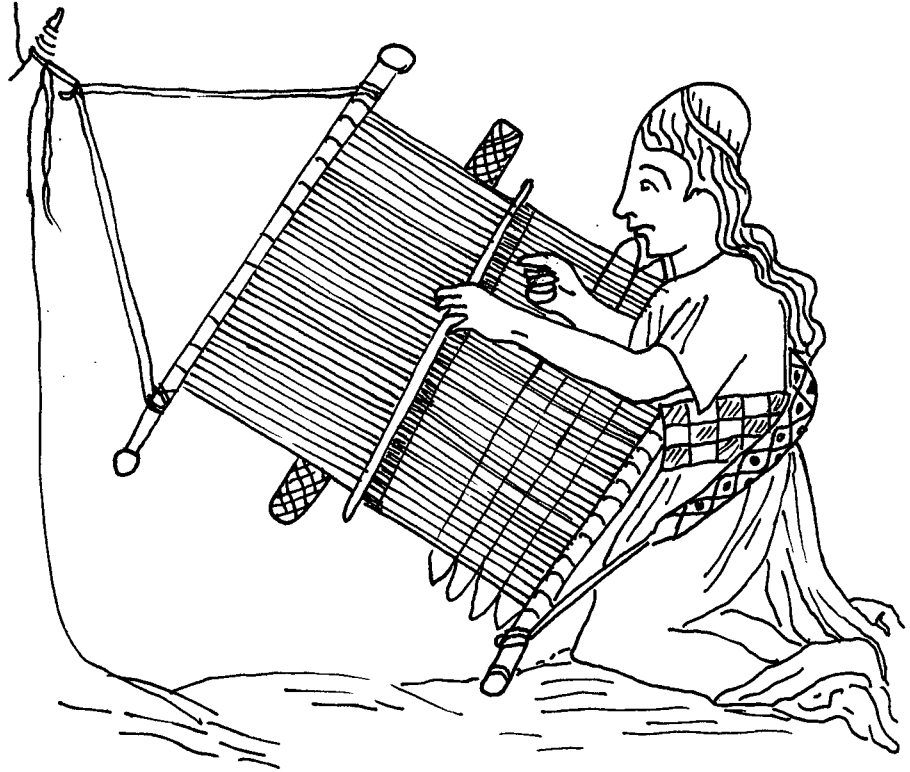


Figure 5

1615 drawing of a back tension loom weaver.

(after Poma de Ayala 1936)

five feet five inches wide. This is considerably wider than could have been comfortably woven on a back tensioned loom. In August, 1932, a mummy bundle from Paracas was opened in the Museo Nacional de Atropologia y Archeologia in Lima. As outer wrapping the bundle had a cloth which was estimated to be over four yards long and seven feet seven inches wide (O'Neale 1936:216). King (1965:44) mentions a Cavernas mummy bundle with wrappings twenty yards long and four yards wide. This cloth is made up of two lengths, each two yards wide, which have been sewn together.

Although the back tension set up seems to have been most common in prehistoric times, it was not exclusively used. A miniature scene on top of a black, polished Chimu ceramic shows two women working at an upright frame loom. They are weaving a tapestry and they are being watched by a man who seems to be supervising them (fig 6). Poma de Ayala (1936) in his post conquest chronicles, gives a very clear picture of this same loom. A woman is sitting weaving at an upright loom which is supported on two vertical posts. The continuous warps are lashed to the beams at the top and bottom of the loom, to produce the traditional four selvages. As can be seen in figure 7 the loom has been set up with a heddle stick, to speed the insertion of the weft. This is the same loom used by the gompi-kamayoc to weave the large, fine tapestries that so excited the admiration of the Spaniards, at the time of the conquest, and still used today for the manufacture of large blankets and tapestries that are made for sale to the tourists.



Figure 6

Upright loom, from a model on a Chimu blackware ceramic.  
(in the collection of the Museo 'in sitio' Pachacamac)



Figure 7

1615 drawing of an upright loom

(after Poma de Ayala).

Just as the loom has not changed since prehistoric times, neither has the way of working on it. Warping up is still carried out in essentially the same way. Weavers are still producing fabric with four selvages, although now instead of making a separate warp for the two halves of a poncho or manta, often now only one warp is made. It is long enough for the two pieces, which are woven up as before and then cut across the middle; the raw ends are hemmed and the two pieces sewn together. Usually a binding, also handwoven, is applied all the way around the edge. This protects the edges from wear and hides the two cut edges.

The attachment of the heddle strings to the heddle stick may be done in several ways, all of which are known from prehistoric times. At this point there is not enough information available to tell whether these differences are regional or personal in preference.

Once the weaver begins she has several possible ways of proceeding. She may begin by attaching the warp to the cloth beam at one end and then weave a few inches before reversing the work and weaving from the other end until both parts meet. In this case she has to attach a second cloth beam to the other end. This is done using a heading cord which is passed through the warp. The heading cord is then lashed to the cloth beam and the first two or three rows that are woven use the loose ends of the heading cord as a weft.

The other way of working is to start at one end and weave to within a few inches of the other end. The work is then reversed and

begun from the other end. Eventually, whichever one is done the weaving meets and there is a hardly discernable join in the cloth. Some weavers are so skillful that the join cannot be found in the pattern. Others have a dislocation in the pattern. A third and easier method requires the pattern to be interrupted and plain weave substituted at that point.

Some of the weavers now weave one long piece and cut it in the middle. In that case, they usually try to have the meeting point in the centre of the piece so that they do not have to slowly and painstakingly weave in the join, using a long needle. The absence of any break in the pattern, or a slightly thinner area is a good indicator that this last method has been used. It is more commonly found on the men's ponchos than on the women's mantas.

#### B. Working Positions at the Loom

There are several ways in which the Peruvian loom may be set up in order to weave material for garments, blankets, sacks and bags. Each of the methods that was observed will be discussed in turn. Despite the apparent differences in many of the descriptions and pictures of Andean looms, other than the treadle types, there is still only one basic loom. It is the way in which it is set up that makes it appear different and which has created confusion in the literature. The loom may be set up in different ways, all of which have already been shown to have been used in prehistoric times. In

one set up the far end of the loom is tied to a post or tree while the near end is held taut by a belt or strap which passes around the weavers back. For this reason the loom is sometimes referred to as a back strap or back tension loom, which latter term I have adopted. In other set ups the same loom may be attached to posts driven into the ground. This version is usually referred to as a ground loom or a horizontal loom, despite the fact that it is not always horizontal. In the third version, the loom is tied to a frame and propped up against a tree or wall. This last set up was not observed while I was in Peru but Cason and Cahlander illustrate an example in use in Bolivia (1976:25).

In the past these different set ups have been treated as if they were completely different looms which bore no resemblance to each other. It is not possible today to tell whether the different set ups are regional in their difference, or whether it is a personal preference, in which functional considerations of the size and weight of the piece are the deciding factors. More research is urgently needed while it is still possible to find enough weavers using the different methods to obtain an adequate sampling. However, for whatever reason, of the several weavers who were observed each was using a different set up. Others have been described by A. Rowe (1975).

In the first method observed in a hamlet just beyond Sacsahuaman, the loom was tied to four stakes. The posts had been set permanently in the ground just in front of one of the small houses. The rear



stakes were longer than the front pair. The warp beam of the loom was tied to the top of the rear stakes and lashed securely in place. The front or cloth beam was attached by cords to halfway down the front posts. As the work progressed and the woven area was wrapped around the cloth beam the tie cords would be lengthened. This can be seen in figure 39 which shows the weaver at work. It also clearly illustrates her body position. The woman kneel-sits in front of the loom with her knees tucked in under it. In this position the weaver works with slightly bent arms, her hands held at a comfortable distance from her body. By leaning forward as far as possible she can manipulate the shed rod and the heddle stick in order to change the sheds.

The drawback to this type of set up is that the weaver has no easy control of the tension on the warp threads. The only way that she can adjust the tension is by loosening and tightening the cords which tie the cloth beam to the front posts. Since this would ideally have to be done several times each warp passage the weaver works under a slight handicap.

A second set up was observed at Tinta. Here the loom was also staked out, but it was tied to very short stakes. There was only just enough room for the weaver's knees underneath. With such a low set up the weaver has to lean forward over the work all the time. This horizontal or ground loom is also found in Bolivia and O'Neale refers to it as an Aymara type of loom (1949:115) as does La Barne

who shows two pictures of a loom that is almost resting on the ground (1948: plate 8). Cason reports it being used by Quechus weavers in Bolivia (Cason and Callander 1976:16). This type suffers from the same drawbacks mentioned above.

The third set up observed in Ollantaytambo was of a weaver who worked with a broad leather belt to control the tension on the warp. The woman sat on a very low stool, although she could as easily have sat or knelt on the ground. The warp beam was attached by a cord to a house post so that the warp was at a slight angle. The woman sat herself on the stool at a sufficient distance to keep the warp stretched under tension. By leaning her weight forward or backward she could reduce or increase the tension on the warp, as necessitated by the various steps of weaving. The principal disadvantage to this set up is that it does place some strain on the back muscles which can result in backaches if a weaver works for several hours at a time.

Any of the set ups described above can be easily interchanged. It is simply a matter of either tying the loom down to four posts or setting it up with a large back strap. The latter method is the one most likely to be used when a weaver is travelling and takes the weaving with her. This was what had happened in the case of the woman observed in Ollantaytambo. I did not manage to discover whether she also worked on the back tensioned loom when she was at home or whether she staked out the loom like the woman near Sacsahuaman. Weavers have

also been described as working sitting on a chair, but this can be taken to be a modern development (A. Rowe 1975:43).

In summary, the weaver may choose among various methods of setting up the loom for weaving. The decision is obviously affected by several factors, including the size of the piece being woven, whether the weaver will be working at home or travelling, and personal preference for what is felt to be the most efficient and comfortable way of working. The decision need not be final. Any weaving which has been staked out can be converted easily to a back tension loom. There are advantages to both set ups.

To make a firm cloth all weavers beat the weft carefully to pack it tightly. Thus as the weaving progresses the warp becomes shorter, due to the take up of the warp being wrapped around the weft, which is completely covered (fig 8). A weaver using a back tension loom adjusts automatically to this change in the warp length. A loom which has been staked out is held at a set tension. Due to this fixed tension the weaver has less ease of control in changing the warp sheds, especially from the shed rod shed to the heddle shed, where loose warps make the change much easier. For this reason, the front cloth bar is generally tied to the posts by cords, so that as the warp length decreases the cords may be lengthened. But working with the staked out loom, especially the higher version, occasions less back strain than the back tension loom. Although the weaver working on the back tension loom may have more back strain, the

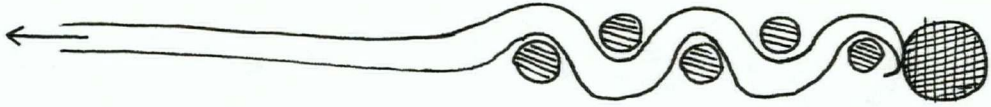


Figure 8

Warp take up during weaving, caused by the insertion and beating of the weft.



Figure 9

Spindle and fleece from Ollantaytambo

tension on the warps is quickly adjusted by a change in the body position, which gives the weaver ideal control of the warp tension.

## CHAPTER 4

### THE WARP-PATTERNED WEAVES

#### A. Definition

The warp-pattern weaves consist of a wide variety of related structures in one, two or more colours. In warp-pattern weaves the warp threads are placed so close together that the weft is hidden, making the fabric warp-faced. Patterning is created by the floating of selected warp threads over two or more wefts, in contrast with warp-faced plain weave, where the warp alternates over and under each concealed weft. Some of the warp-pattern weaves are single-faced, that is, the design shows clearly on only one face. On the underside the unused, coloured threads float freely until required again, at which point they are brought up to the face once more. Others are double-faced with the design showing on both sides but with the colours reversed. Thus where a motif shows red surrounded by a white ground on the reverse it may show white with a red ground on the other side of the fabric. In the case of complementary-warp weaves this is caused by the warp being made up of pairs of alternate colours. Where a thread of one colour is lifted and passes over the weft so that it shows on one side, the other colour passes under the weft, and therefore shows on the other side. All these weaves share the trait that by their complexity the weaver must have had the design clearly in mind before beginning to make the warp. This pre-planning

is not essential for some of the other weaving techniques such as tapestry, gauze and brocade.

#### B. Review of the Literature on Peruvian Weaving Techniques

Until recently, the major work of analysis was that of d'Harcourt. His book, Les Textils Anciens de Perou et leurs Techniques, was first published in 1934 and published in English in 1962. His diagrams are still one of the prime sources of information on the structure of some prehistoric textiles. His terminology is not always as clear and many pieces of dissimilar though related technique are grouped into a single category. This makes differentiation difficult from the information supplied. O'Neale (1936, 1937, 1942) published much technical information that suffers from the same drawback as that of d'Harcourt. For example, pattern weaves of plain weave with float patterning does not describe very clearly the variety of techniques that could fit under either of these headings. Absent is analysis of the special characteristics of structure that would differentiate one piece from another, and aid in making any comparison with a similar piece from another collection.

Textiles are usually inadequately analysed in archeological reports. One notable exception is Engel's report on the Asia unit (1963). Engel describes many of the textile fragments excavated from each burial, so that by association with other objects an approximate idea of the time sequence may be developed. Although more detailed than other archeological reports, Engel's terminology

is still deficient and some identifications are clearly incorrect. It is regrettable that no textile students have been given the opportunity to collaborate on these reports.

A major advance in the definition of textile terminology was the publication in 1966 of Emery's The Primary Structure of Fabrics. This illustrated classification provides detailed analysis of the major textile structures and their subgroupings from around the world. The technical terms used in this study are based on Emery's terminology.

An outstanding example of the utility of Emery's terminology is King's (1965) analysis of the textiles and basketry of the Paracas period from the Ica Valley. However, her study is concerned only with the textile tradition of the past. There has been no attempt to relate the prehistoric tradition to the process of contemporary weaving as carried out in Peru today.

The only comprehensive study of warp-patterned weaves is A. Rowe's The Warp-patterned Weaves of the Andes (1977). A. Rowe approaches the analysis from a constructional point of view, describing the classes into which the warp-patterned weaves may be divided. The information is valuable both as a technical description of the various categories of warp-patterned weaves and from the perspective of the historical development of the techniques during the time periods. Although of tremendous value A. Rowe's study is still concerned only



with analysis of finished textiles. It does not answer the question of exactly how the pieces were woven, although much may be hypothesized from an analysis of the structures.

A. Rowe published a more detailed article on the weaving processes in the Cuzco region in 1975. The descriptions are concise and begin to supply some of the much needed data on the Andean weaving processes. However Rowe does indicate that much additional research is needed to answer some of the questions that she raised, regarding divergences in the way that weaving is effected on the loom. In her conclusion Rowe makes the point that a description of the loom alone suggests an uniformity of technique that is not in fact the case.

In summary, with regard to the prehistoric textiles other than d'Harcourt's book much of the early work is generally too inadequate to be of much use. More recently the quality of information and reporting has improved, but much remains to be done, particularly in respect of the publication of full details of archeological excavations. As to the contemporary textile tradition, the first detailed report has been published, but since it raises many new questions it should indicate the necessity for further research and publication.

#### C. Historical Development

The ancient Peruvian textile tradition is particularly rich. By quite early in the tradition, most of the techniques that are

known from the rest of the world, had already been invented or discovered. Absent only were the damask weaves, which the Chinese developed for the weaving of silk, a material unavailable in Peru. The tradition began eight millenia ago, with twined and looped techniques. Woven fabrics developed some considerable time later, and by 200 B.C. complex techniques had been developed using the proper loom complete with heddles. Decorative embroidery was used in profusion, creating the finest early fabrics. Some of the most complex pattern weaves had already been developed and were being used for small articles. From the beginning of the Middle Horizon (circa 600 A.D.) to the Spanish conquest, tapestry became the major status technique, refined to the point that extremely fine pieces were woven with astoundingly high thread counts.

It is still not possible to establish a complete chronology for the warp-patterned textiles. There are too many gaps in the knowledge and too many pieces which have no exact provenience. Although the warp-patterned weaves have been used from the earliest days of woven textiles they might appear to have been among the less popular techniques used in different time periods. However this view is probably biased, being based on an examination of the more elaborate kinds of textiles chosen for museum collections. Enough warp-patterned pieces have been collected to show that there had been a continuous tradition of uses from early prehistoric times to the present day.

The earliest warp-faced fabrics were excavated from a midden near Huaca Prieta on the coast of Peru. At this point in time the more popular techniques continued to be twining, until the hypothesized development of heddles to control and speed warp manipulation, some-time late in the Initial period, or early in the Early Horizon period (Bird 1952:45).

During the Early Horizon period there was a florescence of textile techniques with many examples of warp-patterned weaves being found at Places like Ancon, near Lima (O'Neale 1946:269), Ocucaje and Paracas on the south coast, and from Supe, on the central coast of Peru (Bennett 1948:271-72). New developments included complementary-warp weaves in three colours instead of two, and supplementary warp weaves in several colours (see glossary for definition).

Examples of warp-patterned textiles from the Early Intermediate period have come mainly from the south coast from around the Nazca drainage area. Mahler records several headbands from late Nazca burials which were excavated at Chavina (1957:plates XIII and XIV), and radio-carbon dated to A.D. 576 to 696 (1957:57). This continuation from the Early Horizon period brought little technical advancement.

By the time of the Middle Horizon complete and complex garments were being made in warp-patterned weaves on the coastland and in the highlands of Peru. For example, one tunic which is made of two separate loom pieces joined together, leaving a slit for the neck, is

in complementary-warp weave (A. Rowe 1977:70). Another tunic consists of stripes of warp-faced plain weave and multiple bands using a variety of techniques and motifs: complementary-warp weave patterning and 2/1 twill derived structures (A. Rowe 1977:61).

From the Late Intermediate period, through the Late Horizon to the Spanish conquest more examples of textiles have survived from the highlands of Peru than from any other Previous periods. The textiles from the highlands show varieties of warp-faced weaves, whether with supplementary warps in a contrasting colour or complementary-warp structures. On many of the textiles several techniques are combined, so that while the body of a piece may use supplementary warps and wefts, the borders might be in complementary-warp weave (A. Rowe 1977: 48).

Why did these warp-faced techniques survive into contemporary times when others, such as the spectacular tapestries, the gauzes and the brocades, have disappeared? The other textiles were part of the official art of the Inca empire and great status was attached to their bestowal and possession (Murra 1962:720). This emphasis on cloth as a measure of position, and the higher the status the finer the cloth, must have required a specialized class of women (and possibly men), the aklla, to weave as a fulltime occupation for the Inca state, and the local officials and rulers (Murra 1962:722). With the fall of the Inca empire the whole Imperial structure collapsed. What was left were the peasant families who continued to produce their own clothing as they had done previously. Spanish

influences changed the type and style of the clothing, but the traditional weaving continued, mainly in the highlands and the more isolated coastal regions, where the effects of contact were less drastic, and did not lead to a complete eradication.

Today, in regions where warp-patterned textiles are still being woven, the weavers have developed quite complex designs with which to decorate the bags, belts, bands, ponchos and mantas that they still use. Although some of the smaller pieces have simple motifs for which parallels can be found in prehistoric times many of the larger designs show the influence of Spanish contact, such as the festival poncho of Tinta. This has a design of flower shapes and is called "rosas" (roses), which is a Spanish word, not Quechua.

By comparing photographs taken in 1910 with what I saw in 1978 in Peru, it is obvious that handmade clothing has become more ornate. The pattern bands on the mantas and some of the ponchos are wider and more complex than they were when the Bingham expedition recorded their appearance (Ferris 1916). This shows clearly the disruption in design repertoire that began with the Spanish conquest and continues through the present time.

In summary, the warp-patterned weaves which date from the earliest days of the textile tradition were already at an advanced state of development by the Early Horizon. The subsequent periods saw a continuation of the techniques with little major technical advance

until the Late Intermediate period. From then through to the time of the conquest there seems to be an abundance of pieces, more than in previous times. These are more complex, occur in complete garments rather than mainly in small bags and bands, as in previous periods, and involve multiple techniques in the one piece. The steady elaboration and development of the warp-pattern weave techniques continued until the conquest, when they became more limited. With the coming of the Spanish there was a disruption in the design repertoire. Where previously the designs had shown small animals and birds, frequently interlocking in stylized, geometric motifs, as well as small geometric repeats, after the conquest European influences began to show in the form of floral motifs. More recently, despite the gradual decline of the tradition and loss of many techniques there has been an elaboration of the designs into wider pattern bands, by the weavers who continue to practice their craft.

# PREHISTORIC CULTURE PERIODS IN PERU<sup>1</sup>

<u>Period</u>	<u>Cultural Development</u>	<u>Textile Development</u>
Preceramic V 4200 - 2500 B.C.	Seasonal occupations, tribal communities of fishers, hunters and gatherers.	Twining and netting techniques, in mats, bags, nets.
Preceramic VI 2500 - 1800 B.C. 1500	Development of permanent settlements, first public structures--temples, pyramids and altars. Beginnings of formal art. Burials in concentrated cemeteries.	Twining continues as dominant technique, but first woven textiles appear, including warp float patterning at Huaca Pireta (Bird 1948).
Initial Period 1800 - 1500 B.C.	Introduction of pottery. Public structures become bigger and more numerous. Agriculture develops.	Invention of heddle loom followed by development of some of the most complex textile techniques, including warp patterned weaves.
Early Horizon Period 900 - 200 B.C.	Large ceremonial structures built of stone and decorated with carving. Development and spread of Chavin cult. Paracas Cavernas burials.	Florescence of textile techniques with tapestry, gauze, painted cloth, double cloth, embroidery and pattern weaves.
Early Intermediate Period 200 B.C. - A.D. 600	Large cities built, irrigation systems developed. Intensive warfare. Moche culture in Chicama Valley. Huari in the highlands, and Nazca in the Rio Grande area.	Textile techniques reach peak of development in Paracas necropolis textiles from early in the period.
Middle Horizon A.D. 600 - 1000	Rise and fall of Huari and Tiahuanaco empires.	Tapestry becomes status technique. Warp pattern weaves continue.
Late Intermediate Period A.D. 1000 - 1476	Small regional states such as the Chimú of Moche Valley. Textiles as status art in Chicama Valley, highlands, etc. Cities flourished.	Development of further textile techniques; gauze, knotted lace, warp stripes, gingham, brocade, embroidery, ikat, double and triple cloth, twill warp-patterning, painting, etc. Weaving as a prestige skill.

Late Horizon  
1476 - 1534

Spanish Conquest  
1534

Inca empire--unification of all of Peru,  
Ecuador and parts of Bolivia and Chile.

Complete disruption of Inca empire.

Tapestry as official art. Warp  
pattern weaves flourish.

Warp pattern weaves continued.

<sup>1</sup>More information on culture periods may be found in Lanning (1967) and Lumbreras (1976).



## CHAPTER 5

### FIELD RESEARCH:

#### SPINNING AND WEAVING TECHNIQUES IN THE CUZCO REGION

The characteristics of the yarn spun by the Andean peasants play an important part in the quality of the finished weaving. For this reason a detailed description of the spinning is given, before attention is focused on the weaving process itself. The four weavers who were observed at work, wove a variety of articles, from narrow bands to full sized garment widths. There is a natural breakdown of technical processes into those used on bands and those used on wider loom pieces. This division, although in some ways artificial, has been kept in the ensuing sections, for the purposes of comparative description. The weaves used are structurally identical and do not change the methods used to produce them.

In the section devoted to the finger weaving of bands, details are given of the making of a warp, tying the heddle strings and the actual starting of the band, all steps which seem to be ignored in the literature. Two different manipulations of the band weaving process are described, one by a weaver without any equipment, the other by a weaver with some tools, showing the versatility of the process. Finger weaving techniques have not previously been described, and even the presence of quantities of belts and bands in prehistoric burials, has not stirred any interest in this aspect of Andean weaving.

The next section records different weaving set ups using a full size loom and finishes with a comparison of weaving techniques. The weavers were observed in action for varying periods of time. Detailed notes and drawing made at the time, in conjunction with photographs taken at each stage, has resulted in this careful description of the various processes used by the weavers. By analysing and comparing the methods used by each weaver it is possible to show which variations result from the loom set up and which from personal preference.

#### A. The Weavers

Four weavers observed during my stay in Peru in 1978

One weaver was observed for about an hour working outside a few houses clustered together beside the road leading from the Inca fortress of Sacsahuaman towards Q'enco (Kenco), a sacred Inca site. No name was found on any of the local maps to cover these small houses, unless it is named like the archeological site, Sacsahuaman. The name of the weaver is also unknown. The woman spoke no Spanish. Conversation was carried on with the aid of a young man, one of the students of Dr. Chavez Ballon, from the National University of San Antonio Abad in Cuzco. With his aid the Quechua names for the loom parts were obtained. The woman was from the town of Pisac but Dr. Chavez Ballon said that the costume was not from there. The costume was for the tourists. Indeed two of the small houses also functioned as shops. They were full of artes tipicos, local articles made to sell to tourists, in the traditional handicraft style of the region.

The second weaver was observed in the Indian town of Ollantaytambo, over a two day period. This woman, Octavia Sinchi, was from a nearby village which was only reachable along a foot trail. The village is called Quillyo (or Kwillyo). The senora had walked into Ollantaytambo carrying her small son and a large poncho that she was in the process of weaving on a back strap loom. While in Ollantaytambo she demonstrated weaving on the poncho, and then made the warps for several narrow bands. She wove a variety of different patterns, using two related structures, complementary-warp weave and supplementary-warp weave (see appendix). The narrow bands were woven with finger-weaving techniques. This means that essentially no equipment was used in their manufacture, and all the work was done by the manipulation of the fingers. However, string heddles were made of some scraps of strong yarn to speed the weaving process. The small bands partially woven by Octavia Sinchi, are now in the possession of the researcher, to whom they were given at the end of the two days.

The third weaver, a male professional, was observed at work inside his house at Tinta. Tinta is several hours from Cuzco by very rough roads and can be reached by hired car or by train, since the village is on the Cuzco-Puno line. He worked on a very low loom which had been staked out on the floor in the area where light came in through the open door. There were no windows in the room. He worked, kneeling on the floor on some old, handwoven rags, with his knees tucked in under the front loom bar. Only part of a weaving sequence was observed. This weaver as a professional, generally only weaves when he has a special order, or he may weave and sell to one of the Cuzco dealers, who make

regular visits to the out of the way villages in order to buy up the local weaving and sell it to the tourists in the Cuzco and Pisac markets. While in Tinta other weavers were visited and their work viewed, but none of the others were observed at work.

The fourth weaver was observed over a three day period when the researcher stayed with a campesino<sup>1</sup> family in the Indian town of Chinchero. Although this woman does weave larger pieces, at the time that the research was carried out she was weaving a series of bands with the help of her eldest daughter, a child of about twelve years. These she left partially woven with the heddle strings still attached and specially made loom sticks inserted in the warp, and then sold them to the visitors who came to the Sunday morning market at Chinchero, during the tourist season. The weaver and her daughter were working on a variety of patterns, many of which were similar to the bands of pattern weave that decorated the carrying clothes that were used around the yard as seat covers, when sitting on cold stones. The stone wall which enclosed one side of the yard in which the house sat, was part of the original Inca walls of one of the terraces around the Inca marketplace. Half the modern town is built over the earlier Inca town and incorporates parts of earlier walls into the later structures.

The weaver in Chinchero warped up several new pieces to show how

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<sup>1</sup>Local name for the Indian or part-Indian people who still make their livelihood by farming

the warping was done. She also taught the researcher to weave, using the same method that she had used to teach her daughter, and the method in which she also had been taught to weave when she was a child. During the visit the señora also demonstrated spinning technique using a drop spindle.

#### B. Spinning

Spinning of the yarn is an activity that is associated with weaving the world over. A description of Andean spinning with a drop spindle is included here because of a particular quality of Andean weaving. The textiles produced on the continuous warp loom are very hardwearing, partly because of how hard each weft shot is beaten in, after its insertion in the shed, but partly also because of the quality and characteristics of the yarn itself. The Andean handspun yarn is given an extra tight twist, which makes it more resistant to the friction that might affect it during the weaving process as the shed changes are made. But also, this tight and hard twist gives it better wearing properties. The Andean spinners have developed a specific technique to spin this kind of yarn. Even synthetic yarns, that have been commercially spun as knitting yarns, are frequently respun or over-spun, on top of the previous spinning to give a tighter twist to the yarn. This makes it more durable and hardwearing. Such qualities are prized in the highlands, where the labour involved in making one poncho may be spread over an entire year. The over-spun, brightly coloured, synthetic yarns may be seen in many of the more recent weavings. Spinners can be seen walking along with a skein of commercial yarn slung over one arm and a

spindle dangling from the other hand.

The way in which the yarn is spun will decide to a great extent, not only what the final fabric will be but also of what quality. If the spinning is poor, unevenly spun and lumpy in places, this will affect the durability of the finished fabric, of concern to Andean weavers, who expect a garment to last a lifetime. It may take a weaver up to a year to make a poncho, with the labour of spinning, dyeing, weaving and finishing the pieces spread between all the other necessary daily chores and work in the fields to raise food. The yarn will be spun more tightly and finely if it is to be used for a poncho or manta, rather than for a blanket. It will be a thicker thread, of coarse fibres if it is to be used for storage sacks. While a professional weaver, working for eight or more hours a day, will take from one to one and a half months to weave a poncho, another weaver coping with all the daily chores, may take several months at this stage. With an entire family to clothe, no weaver wants the clothes to wear out in a few years.

Spinning is done with a drop spindle which is called pushka<sup>2</sup> in the Quechua language. It consists of a spindle whorl and a shaft, which is narrow at one end and widens somewhat towards the other end, which is sharpened into a point. The spinners observed all used a carved or

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<sup>2</sup>This term was also found by Goodell in 1968 (5), but Stevenson (1974: 5) gives the Spanish term palo (stick).

turned wooden whorl and a more roughly shaped shaft, but Stevenson records the use of a soft stone whorl (1974: 6). Several of the shafts looked as if they had been cut from a branch and shaped with a knife. The shaft is generally about ten to thirteen inches long, as is the one shown in figure 9. A child's spindle which was examined in Chinchero, had a shaft seven and a half inches long and a roughly turned whorl that was one and a half inches in diameter and just over half an inch thick. This spindle had been made for the girl by her father. When she grew bigger, her father would make her a bigger one.

In response to questions it seems that the girls begin to learn to spin at about five years of age. This information matches with that found by Goodell in 1967 and discussed by Bird in an article of yarn production rates (1968: 11). He mentions a six year old girl, whose spinning was competent enough to hold its own with that of the adult spinners. However, contrary to what Goodell found (1968: 6) I saw only women spinning, not men, and most of these tended to be older women. It may be that in the more outlying districts the men still spin, but in Tinta, a male professional weaver indicated that his wife did the spinning while he did the weaving. Stevenson (1974: 6) reports that in Chorcovos de Santiago the girls are sixteen or seventeen before they begin to spin regularly, and that young girls do not spin. Insufficient information is available to indicate whether this is a regional difference.

Occasionally one may see women walking along the roadway, spinning as they go. The fact that they are spinning does not slow their

walking pace. On one occasion I had to hurry to keep up with a woman who was spinning as she walked. She had chores to do elsewhere, and so, with her baby on her back she walked along at her normal pace, taking advantage of an ideal opportunity for some uninterrupted spinning.

Another woman spinner was observed in Cuzco indoor market. She was crouched beside a small heap of vegetables that she had brought in to sell or barter. This woman spun a very short yarn length, since her sitting position did not allow for the accumulation of long twisted threads before they were wound onto the spindle. She kept the tip of the spindle over, and sometimes in a bowl which sat beside her. According to O'Neale (1949: 115) this is an Aymara technique rather than a Quechua one. The influence may have travelled up the Vilcanota from Puno on Lake Titicaca, which is the fringe of the Aymara speaking area.

#### Spinning: Using a Drop Spindle

The unspun fleece is carried tucked under the left arm. The spindle hangs suspended by the already spun yarn from the right hand. A few fibres are pulled gently from the fleece in a continuous roving. This is given a small amount of twist by the right hand. This twist helps to hold the fibres together and makes it possible to keep pulling the fleece into a roving. When about twelve to eighteen inches has been pulled out, the roving is attached to near the top of the spindle shaft by a half-hitch knot. The spindle is then allowed to spin in the air, rapidly twisting the thread. Once this thread has taken enough twist, and this the spinner must judge by experience, the yarn is once more pulled out from the unspun fleece. The twist is allowed to travel



along these fibres through the right hand fingers, which control the amount of twist passed along.

If the yarn becomes thicker nearer the spindle rather than the fleece, the twisted fibres are wrapped around the left hand to prevent them tangling. Then the shorter, thicker piece is pulled out to the same thinness as the rest of the yarn. The spindle is dropped and spinning continues, until the spindle is almost touching the ground (fig. 10).

Once this initial spinning has been done, the spinner stops the twist and takes hold of the spindle with her right hand, while winding the spun thread around her left hand (fig. 11). The spindle is dropped again and the spinning action continues. This time it is not freshly pulled out fibres that are being spun, but the thread which has already been twisted. The right hand controls the amount of twist which is passed up the thread. Extra thread is slipped off the left hand as required. Once all the thread that was on the left hand has been over-spun, it is wound back onto the left hand. The half-hitch knot is removed from the spindle shank and the thread is wound onto the spindle in a downward and upward spiral (fig. 12), finishing with a half-hitch knot to secure the thread and prevent it unwinding off the spindle. About twelve inches of yarn is left free, ready for the next stage of spinning.

The spindle is swung to start it spinning again. The right hand holds the thread firmly so that the twist cannot pass until enough

Figure 10

Spinning: pulling out thicker length of partially spun yarn, while spindle spins to ground.

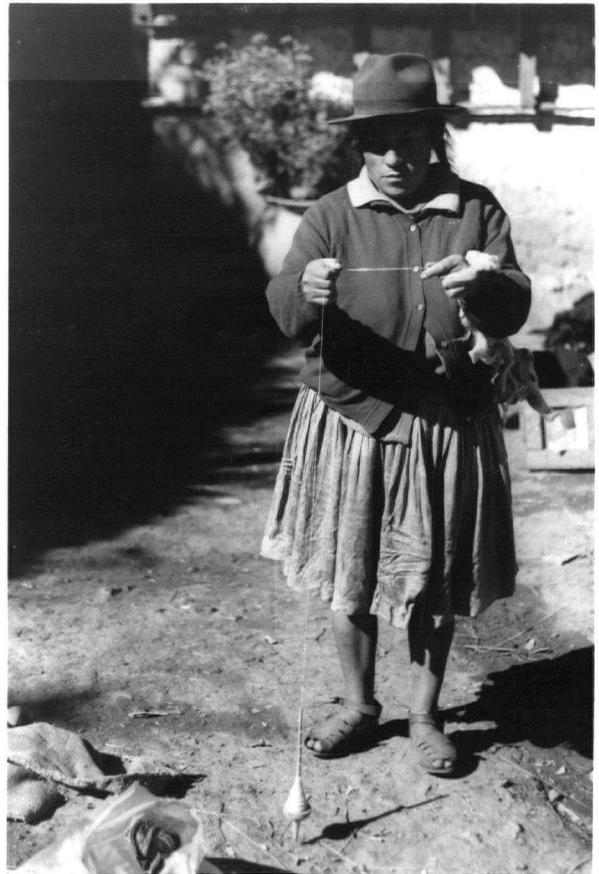


Figure 11

Holding spindle while winding yarn around hand.

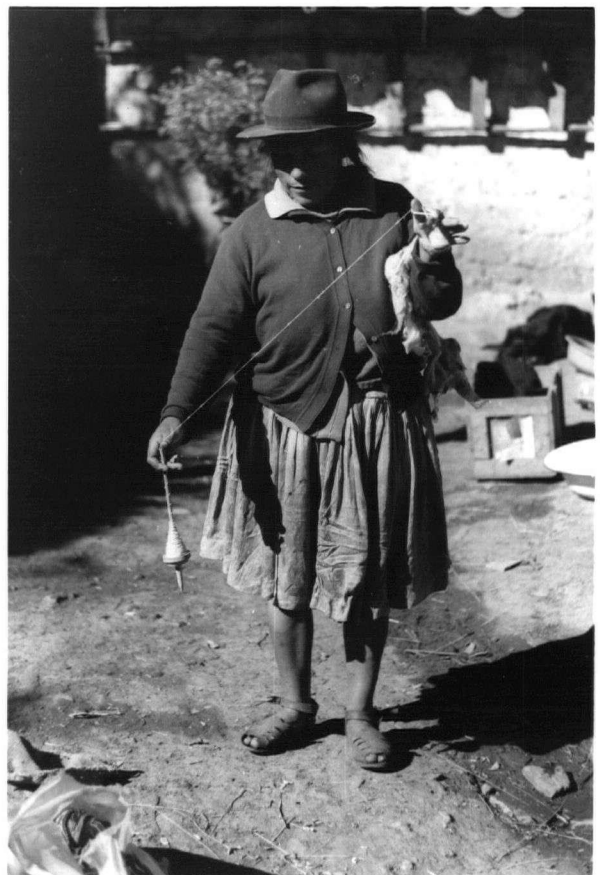


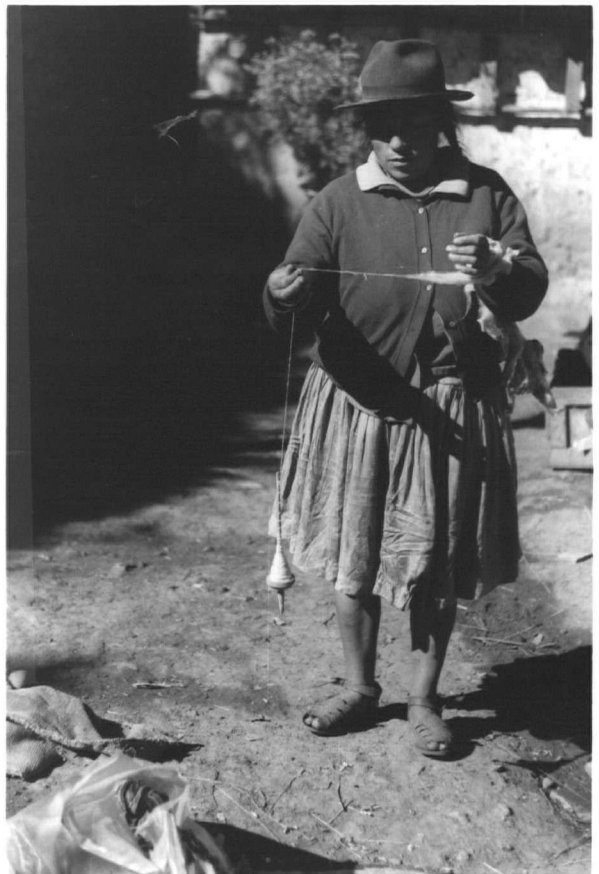
Figure 12

Spinning: winding the overspun yarn onto the spindle.



Figure 13

Spinning: drawing the fibres out of fleece while twist passes slowly along them



fibres have been pulled out. This is done by exerting gentle pressure to draw the fibres from the bundle of fleece (fig. 13). Once the fibres have been pulled out to an even thickness, and no more than a comfortable arm's length, the twist is allowed to travel along and tighten the fibres up into a thread. This thread is then wrapped around the left hand and over-spun.

C. Finger Weaving of Bands: Ollantaytambo and Chinchero

1. Warping

This method was observed in two different villages, Ollantaytambo and Chinchero. In Ollantaytambo, Señora Octavia Sincha used little pieces of stick broken off the branch of a tree. In Chinchero, Señora Stefania Quispe Huaman had four large iron nails or stakes which she used for warping and to hold the other end of the work when she was weaving. Both weavers set up a warp for a warp-faced, complementary-warp, patternweave, but the method of warping is equally applicable for other warp-faced pattern weaves on belts and bands.

Señora Octavia begins by driving the four sticks into the ground of the courtyard, using a stone to hammer them. She sets the four sticks out in a row, with the outer two at the distance required for the band that she is going to weave. The other two sticks are spaced between these. Señora Stefania in Chinchero makes a large loop of wool by spreading out her arms. She ties a knot to secure the loop. She then hammers in one of the larger iron stakes at a slight angle, using a convenient stone as a hammer. She next sets the loop around the stake and extends it as far as it will reach, gives it a twist and hammers in

the second large stake to hold it there. The two smaller stakes are set in the ground between the first pair. The loop of wool is set in a figure of eight with the twist coming between the centre stakes.

Señora Octavia begins warping by tying the colour to be used for the outer stripe to the stick. Then she brings the yarn between centre sticks B and C, and around the outer stick D. It is then brought back between the centre sticks but in the opposite direction from the previous passage so that it crosses the first thread (fig. 14). The thread is taken around A, as shown in the figure 15.

This is repeated, by both women, until enough threads have been wrapped for the first warp stripe. Señora Stefania breaks the thread and ties on a new colour at A, but Señora Octavia wraps the yarn several times around A, pulling it in a spiral up the stick, and then sets the ball of wool to one side, to be used again later in the warping. She ties a new colour to A.

Both weavers continue in this way, making sure that the threads alternated through B and C in a cross, from left to right and from right to left. When the outer warp stripes have been completed, generally using two or three colours, the weaver is ready to begin warping the pattern area of the warp. For this two colours are tied on, either to A or to the previous colour. At this point, if later rearrangement of the warps is to be avoided, care must be taken to



Figure 14

Warping: forming thread cross between centre sticks.

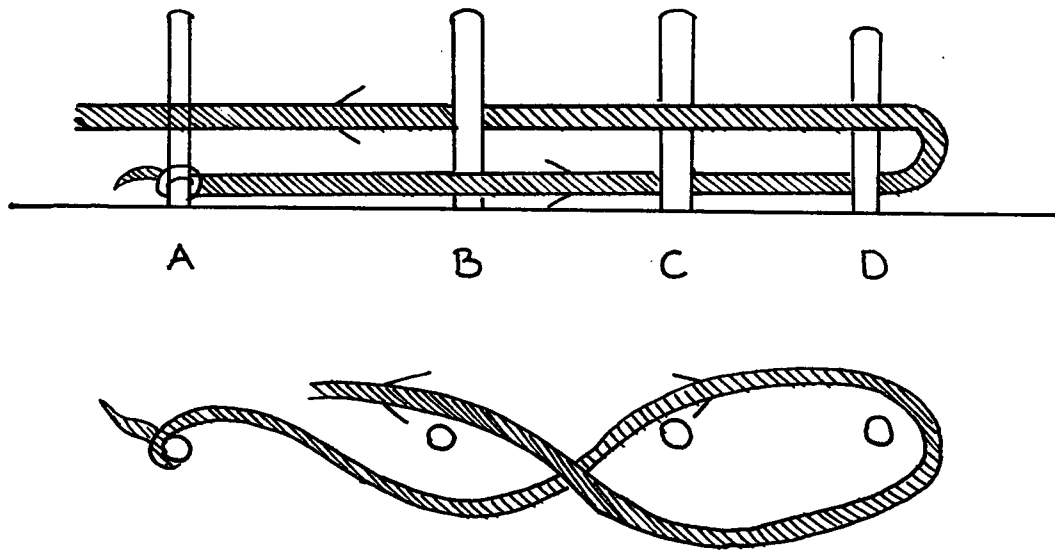


Figure 15

Warp wrapped in a figure of eight around four stakes, forming the cross between the centre pair, shown in side view and from above.

insure that the threads alternate in direction in the layers of thread which make up the cross between B and C. For ease of description the two colours will be referred to as R for red and G for green. Keeping the two threads separated by a finger, they are taken towards B. While R remains on the near side of B, G is taken around the far or left side so that the stick separates the two colours, as in diagram 16.

It is important to note that in the previous row of single colour warping, the thread was returned around D and between C and B from the left to the right, as shown in diagram 15. Therefore G must cross to the right of C before R crosses to the left of C, so that G lies below R to keep the alternating order of the threads in the cross-over between B and C. Failure to keep the threads in this order at the cross will necessitate the rearrangement of most of the threads before the heddle strings can be tied and weaving can begin.

Both threads are then taken around D and back towards C. R is taken around the left side of C, the same side as previously, while G passes on the near side. G is then crossed over to the left of B and R is crossed on top of G, to the right of B (fig. 17). Both threads are then taken around A. The entire sequence is repeated from the beginning, until enough threads have been warped for the pattern section.

These two threads are then tied off by Señora Octavia and the previous threads which have been wrapped around A are unwrapped and the outer stripes are warped up in reverse order to the beginning.



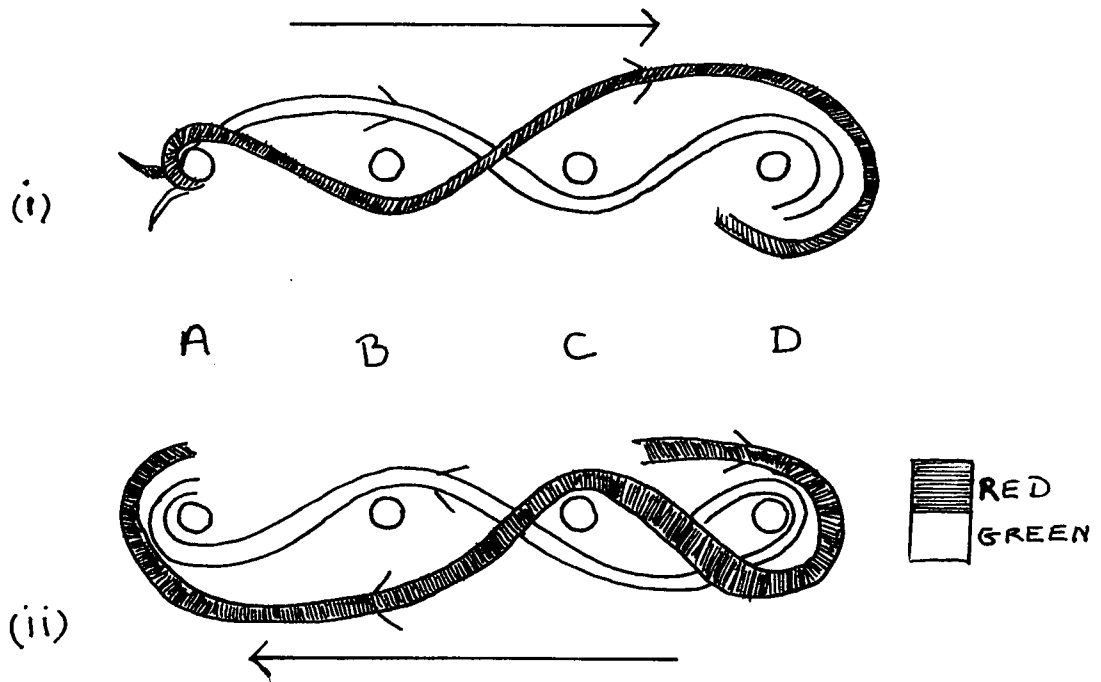


Figure 16

Warping: Showing direction of warping with two colours, (i) from A to D, (ii) around D and back to A.



Figure 17

Warping: Octavia laying the double thread cross between the centre sticks

Senora Stefania breaks the two threads and ties on the next colour, also in reverse order for the outer stripes. Once the warping of the band is complete, the thread is broken off and about fifteen to twenty inches is left, which is temporarily wrapped around A. The warp is now ready for the tying of the heddle strings.

## 2. Tying the Heddle Strings.

Señora Octavia pulls the two centre sticks out of the ground but leaves them in the warp to separate the threads of the cross. A thread of smooth, hard twist, about twenty inches long is passed through the shed formed by stick B. A loop about three quarters of an inch in size is made at one end. The loop is placed on the first finger of the left hand which is held close to the threads. The thumb and first finger of the right hand are used to pick up a loop of the long thread from between the first and second warp threads, under which the loop passes. This loop is given a half twist and placed on the first finger of the left hand beside the first loop. This is then repeated with a loop picked up from between the second and third warp threads (fig. 18). In this way each warp thread is secured by a loop, about three quarter inches long, which will keep them separate from each other. Once all the warp threads have been caught up, and this only refers to the warp threads which lie above the heddle thread, not those that lie below, the end of the thread is doubled and the loop is passed through all the heddle loops being held on the first finger of the left hand and these are then tied securely together in a bundle. The excess length



Figure 18

Tying the heddles: Octavia picks up a loop of heddle thread from between each warp thread.



Figure 19

Attaching heddle stick: Stefania holds stick ready to lash to heddle loops.

of loop is then passed through the shed held open by the other stick, C, and leaving about three inches of slack the end is then tied off to the heddle strings so that the two sheds are held by the same length of yarn. The sticks are removed at this point, having served their function.

Señora Stefania also begins by making a three quarter inch loop in a firm, less sticky yarn. This loop is passed through the shed in the warp created by stick B. The loop is placed on the first finger of the left hand and is held just above the warp.

With the first finger and thumb of the right hand the weaver picks up a loop of thread from between the first and second threads of the warp which lies above the yarn. The loop is given a half twist and placed on the first finger beside the first loop. This is continued across the warp until all the top threads have been caught up in a loop of yarn.

Once all the loops have been made, the excess thread is then tied to the end of a short stick, that is a little wider than the warp width (fig. 19). The yarn is then passed through the heddle loops and tied firmly to the other end of the stick. A notch is cut into each end of the stick to hold the thread securely and prevent slipping. The string passed through the heddle loops is then whipped to the stick every three or four heddle strings.

A second length of yarn is tied behind the heddle stick in the shed made by C. This is sometimes called the lease cord and holds the second shed warps.

### 3. Starting the Band

Señora Octavia picks up the wrapped threads which are held by Stick A and inserts her finger in the loops to prevent them slipping. This creates the first shed through which the excess warp thread is passed. The señora pulls it firm but not tight. She makes sure that all the loose ends and knots are passed through this shed, so that there will be no pieces hanging. Placing her fingers in the loop between the heddle strings and the lease cord, she pulls on the heddles to bring these warp threads up and away from the others. Once enough of the new shed has been opened she inserts her fingers in the shed and extends the fingers to force the shed open. The shed cross is brought forward against the first insertion of weft, and beaten in by the pressure of the fingers. The second row of weft is inserted, along with any loose ends. After one or two more rows the weaver is ready to begin the pattern pick-up.

Señora Stefania begins the band by passing a string through the first shed and tying the string around her waist. She then opens the new shed by relaxing the tension on the warp and pulling up on the heddle stick. She inserts a small shed stick in the newly opened shed

and by exerting pressure on the stick and at the same time increasing the tension on the warp threads she gradually drags the warp cross and the stick towards her. She beats in the cross, using a slight rocking motion. A weft, the excess end of the last warp thread, is inserted and pulled firmly into place. She lifts the lease cord, pulling up on it, until there is space to insert a shed stick in the shed it makes. She stands the shed on its edge and works these threads past the heddle strings. Once they are clear of the heddles she inserts the shed stick here and brings the stick forward and against the weft. She beats in the weft, so that the warp forms a slight ridge coming over the weft. She is now ready to begin the pattern pick-up.

#### 4. Weaving a Narrow Band

For convenience and ease of working Señora Octavia had taken the warp and wrapped it around her big toe. With her legs stretched out, she maintains tension on the warp. When she begins weaving the band it is at first held by the fingers. After the first few rows of weaving have been completed it is then pinned to the skirt of her bibbed apron. The large pin which is used for this is called T'pana. It is also used to pin on the manta or shoulder wrap that many of the women wear.

To open the shed the weaver inserts her fingers into the loop formed by the heddle strings and the lease cord (which separates the second shed threads, behind the heddle strings), and pulls upwards

with the thumb. The other fingers are extended against the threads, pulling them apart (fig. 20). Once the threads of the rear shed are free, the fingers are inserted into the shed and pushed up against the heddle strings to separate the threads and pull those of the rear shed past the heddles (fig. 21). Once the shed has been worked past the heddles the thumb is inserted in the shed and a space made for the other fingers. All the fingers are inserted in the new shed (fig. 22) and it is brought forward against the woven section, ready for the new pattern pick-up. Where the threads are sticky and cling to each other they are scored with the thumb several times to loosen them. This has the same effect as scoring with the llama bone stick. Once the shed has been changed, it is held open while the pattern pick-up is done.

#### Band A: Complementary-warp Weave

The weaver holds the end of the warp in the left hand with the thumb and second and third fingers. The first finger is inserted in the shed. She uses the thumb and first finger of her right hand to pick up or drop the warp threads for the pattern. Picked up threads are held by the second and third fingers of that hand. Once all the pattern has been picked up the shed is opened enough to pass through the weft, which is pulled through almost to the end. The finger is removed from the shed and then the selvedge is held while the weft is pulled up firmly, but not so much that it pulls in on the selvedge.





Figure 20

Opening rear shed on narrow band: Octavia pulls up on lease cord to separate rear shed warps.



Figure 21

Opening rear shed on narrow band: Octavia Pushes warp threads apart to force rear warp shed past heddle strings.



Figure 22

Opening rear shed on narrow band: Octavia brings the shed cross forward.



Figure 23

Pattern pick up on narrow band: Octavia picks up threads from below

Band B: Supplementary-warp Weave

The weaver inserts her fingers in the shed, ready to begin the pattern pick-up. Three fingers of the right hand are inserted in the shed, behind the middle finger of the left hand. The fingers and thumb of the right hand hold the warp threads already selected. As the warp threads are passed across from the left hand they are caught up by the first finger and thumb of the right hand. The first finger of the left hand lies in the shed with the second finger lying below the lower threads as in figure 23, so that it can be used to pick up threads from below. Figure 24 shows the second finger pushing up two threads. The threads are held between the first and second fingers of the left hand and then passed across to the right hand. This is continued across the width of the band. The weft is passed through the pattern shed, as already described for Band A.

The weaver inserts her bunched fingers between the heddle strings and the lease cord. She pulls up with the thumb against the cords, while pressing down with the other fingers against the warp. To separate sticky threads, the weaver pulls backwards and forwards in a sawing motion. This separates the heddle string warps from the others, pulling them up and through the other warp threads of the previous shed. Once they are separated the fingers are forced into the space and pressure applied to pull the sticky warp threads apart (fig. 25). With tension on the warp threads the shed cross is brought forwards towards the weaver, and is beaten against the weft to help pack it down. The





Figure 24

Pattern pick up on narrow band: Octavia picks two threads to transfer to right hand.



Figure 25

Opening heddle shed on narrow band: Octavia pulls up on heddles strings to separate heddle shed threads.

pattern pick up is then carried out and the weft passed through the pattern shed, as previously described.

Where a more complex pattern is being woven several heddles may be used. Figure 26 shows the sticks placed temporarily in the warp to hold the threads while the new heddle strings are made. Figure 27 shows a band being woven using several heddles. The shed is changed as previously described, except that where the heddles are not attached to a lease cord the weaver pulls straight up on the heddle strings to separate out the new shed threads. Also, the new shed may have to be taken past several sets of heddles in order to open the shed for the pattern pick-up.

##### 5. Weaving a wide band: Stefania

Weaving on a wide band is carried out with the heddle strings attached to a stick, as described on page      in the section on tying the heddle strings. The process of weaving is made easier, and more even by using up to six narrow shed/sword sticks. In some ways this resembles the weaving of the wide garment widths described earlier.

The weaver begins by opening the heddle shed. She relaxes tension on the warp threads and pulls upwards on the heddle stick, at the same time sawing back and forth to separate any threads which may have a tendency to stick together. Once the warp threads have been separated and there is a space underneath the heddle strings, one of



Figure 26.

Octayia uses several sticks  
to hold additional pat-  
tern sheds.



Figure 26

Octavia uses multiple heddles



the short sticks is inserted into this new shed. It is placed flat, and as tension is once more applied to the warp the stick is brought forwards towards the weaver. If the threads do not separate easily, they can be loosened by the scraping of the thumbs across the width of the warp. While maintaining pressure on the stick, the weaver scrapes with both thumbs from the centre of the warp across to the outside edges. This action is continued as often as is necessary to bring the beater stick up against the woven edge.

The weaver next opens the rear shed by pulling up on the lease cord which is tied behind the heddle stick. Another beater stick is inserted into the space. It is turned on edge and brought up close behind the heddle stick. The warp is scored with both thumbs, in front of the heddle strings and the warp threads are gradually separated. The threads raised by the beater stick behind the heddles are brought past the heddle strings and cleared from them. While one hand holds them separate from the other warp threads, the stick behind the heddle strings is removed and inserted in the shed space in front of the heddle strings. It is placed flat and then, with tension applied to the warp it is brought forward towards the weaver, as was the previous stick. It is placed close to the first stick. This entire process of opening the heddle shed and inserting a stick, is repeated, followed by the insertion of a stick into the lease cord shed. The weaver may work with up to six sticks. Sometimes, one of them is left permanently in the lease cord shed, but behind the heddle stick.

Once all the sticks have been placed the weaver has a choice of two ways of proceeding. She may do the pick-up of pattern threads in the first shed, followed by the insertion of the weft in that shed, or she may do the pattern pick-up in each of the sheds held by one of the sticks, and only then pass the weft through each pattern shed in turn. Both methods were observed being used by one weaver, so it is a matter of personal preference. This may be influenced by how familiar the weaver is with the pattern that she is weaving, for it is harder to see the pattern development when it is held by the sticks before the wefts have been inserted.

To begin pattern pick-up, the shed sticks are pushed back two or three inches, to give a small working area. This area does not need to be large, for the weaver only needs enough space to insert her fingers and interchange the threads for the pattern. The first finger of each hand is inserted into the shed and threads are held secure by the thumbs which sit on top of the warp threads. Threads are selected and passed to the left hand. The top threads which are not wanted are dropped from the right hand while the appropriate thread is picked up from below by the second finger and first finger of the left hand. They are then held by the first finger and thumb of the left hand (fig. 28). In figure 29 the weaver is shown selecting two threads of the top shed and passing them across to the left hand. Once pattern pick-up is completed the weaver removes the shed stick from the shed and inserts it into the pattern shed. At this point she either (1) places it on edge and passes the weft through (fig. 30), and then





Figure 28

Pattern pick up on a wide band: Stefania reaches for upper warp pattern thread.



Figure 29

Pattern pick up on wide band: Stafaniapasses lower warp pattern thread to left hand.

holds the loop while she pulls the weft thread up. This is then followed by the removal of the shed stick and the beating in of the weft by the next shed stick before continuing with the pattern pick-up, or (2) she slides the shed stick forward, and brings the next shed stick forward also. She then begins the pattern pick-up for the next row of weaving, but without having passed the weft through the previous shed. Figure 34 shows where this has been done for several pattern pick-ups. Once all but one of the sticks have been inserted into a pattern shed, the weaver then pushes each of them in turn back towards the heddle stick so that she again has a narrow working space close to her, at the first stick. The last shed stick holds no pattern pick-up, for it will be used as the beater of the last pattern row. It will then be the first shed stick in the new sequence. She then turns the first stick on its side and inserts the weft through the shed. She pulls the weft through, taking care not to pull up too tightly on the selvedge edge. The shed stick is removed and the next shed stick is used as a sword beater to pack in the weft. The stick is grasped with both hands, tension on the warp is tightened up, and the weaver brings the stick forward against the warp cross with a forceful rocking motion. This rocking motion is a slight up and down scraping or sawing at the warp cross. At first it was unclear why this was being done, but later when the observer was weaving under the directions of this weaver, it became clear that this up and down pivoting of the stick helped pack in the weft more firmly, so that the warp almost formed a ridge where it passed over the weft.



Figure 30

Stafania passes weft through shed formed by shed stick.



Figure 31

Belt with several pattern sticks in place.

The next shed stick is placed on edge in the shed and the weft is then passed through. The entire process is then repeated until all but one of the shed sticks have been removed. This stick is brought forward and the opening of the sheds is then continued and a shed stick inserted in each shed in turn.

Once several inches of weaving have been done the weaver pulls the weaving off the string which she has been using to hold it around her waist. She reties the string around her waist and then secures the work with the weaving area close to her. This is done by folding the woven section under the string and securing it with a large pin. This can be seen clearly in figure 32, showing the band on which the little girl is working.

The little girl, who is just learning a new pattern, is using only two shed sticks. By having a second shed stick inserted in the warp, the pattern pick-up is made easier. The second stick puts extra tension on the threads to hold them in their place, beside their neighbours. Threads are less likely to be picked up out of turn, and therefore mistakes prevented.

#### D. Loom Weaving of Wide Cloth

##### 1. Octavia

Octavia Sinchi walked from Kwillyo to Ollantaytambo early one morning. She brought with her a small son and the poncho which she



Figure 32

Sonia weaving, with band pinned to her sweater.

was in the process of weaving. About half of the warp had been woven. Octavia was weaving the poncho in one piece. Once the weaving was finished she would cut the cloth in half and join the two pieces together, leaving a slit for the head opening. The edges, including the cut ones, would be bound to protect them and make the poncho longer wearing.

Unlike the other weavers at work on a large project, Octavia worked with the loom tied to a backstrap. This is a wide belt that goes around the back. The other end of the loom was suspended from a post at about shoulder height. Octavia sat on a low stool. Working with the backstrap or belt, although more tiring for the weaver, does give greater control in weaving. The tension on the warp threads is adjusted with slight changes in the weaver's body position. The weaver must keep her body very still when she does not want to alter the tension on the warp. She therefore works from the shoulders, with any turning or leaning forward coming from the waist. When she wishes to ease the tension she leans her whole body forward, taking some of her weight off the strap that sits around her buttocks. If she needs a tighter warp, as when beating in the weft, she pushes back against the belt.

To change the shed the shed rod is pushed away from the weaver. The weaver then punches down with her left fist at the warp threads that come over the shed rod. This helps push down the warp threads of the previous shed. It also separates the shed-rod warp threads and lets



the heddle shed threads pass upward between them. The weaver pulls upwards on the end of the heddle stick with her right hand (fig. 33). She continues to push downwards against the warp threads until some of the heddle warp threads are pulled clear. While doing all this the weaver holds her body weight forward, easing the tension on all the warp threads, so that she can pull the heddle-shed threads up more easily. Once the first heddle-shed threads are pulled clear at the edge the weaver inserts the sword beater gradually into the shed. The sword beater is inserted behind the heddle stick. She continues pulling up on the heddle stick, pulling clear the threads of the heddle shed, until the sword beater has been inserted completely (fig. 34). She then leans her weight back against the belt, and, using both hands, pulls the sword beater under and past the heddles. The shed rod is then brought forward against the heddle stick. The sword beater is moved further forward towards the weaver and the shed stick which is sitting in the previous shed, holding the threads ready for the pattern pick-up to be done. By inserting both a shed stick and a sword beater in alternate sheds, the warp threads are held in a cross position, side by side. This makes the pick up of threads for the pattern weave area much easier, and mistakes are less likely to occur through threads being misplaced.

The outside warp stripe area is picked up as far as the pattern stripe and a pattern stick inserted in that same shed. The weaver scrapes the llama bone pick across the warp threads in front of the woven area. This separates any sticky threads. The weaver uses her



Figure 33

Shed changing on a back tension loom: Octavia pulls up on the heddle stick.



Figure 34

Shed stick inserted in shed behind heddle stick, while shed rod is brought forward.



left hand to hold the warp threads of the pattern area. The middle finger is inserted into the shed and the threads are held firmly. Her right hand holds the bone pick, which she uses to pick up the required threads. As the threads are picked up on the bone, their partners are dropped from the middle finger of the left hand to sit below the pick (fig. 35). These threads will appear on the reverse side of the cloth. Once all of the pattern area has been picked up the weaver sets the shed stick on edge and reaches into the shed until she can grasp the point of the bone pick which sits in the pattern shed. The pattern stick is brought forward until its tip settles into a notch in the heel of the llama bone. The pattern stick is used to push the bone pick along and out of the shed. This carries the pattern stick smoothly under the picked-up threads, creating a new shed for the next shuttle insertion. The shed stick is removed, leaving the pattern stick in the pattern shed. The pattern stick is turned on edge, separating the threads, and the shuttle stick is passed through this shed opening (fig. 36). When pulling the weft through the shed the weaver holds about one and a half inches of weft inside the shed at the selvage, to prevent the selvage from being pulled in and distorted.

The pattern stick is removed and the sword beater is brought forward against the weft. At this point the weaver increases tension on the warp threads. The weaver holds the sword beater up against the weft, while she beats in downwards sweeps against the weft, between the warp threads, using the bone pick. Halfway across the warp she changes the pick to the other hand, and continues beating the weft in (fig. 37).



Figure 35

Picking up pattern threads: Octavia picks up the pattern threads with a bone pick.



Figure 36

Inserting weft: shed held open for the insertion of the weft.





Figure 37

Beating in the weft: holding sword beater firmly, Octavia beats in the weft with the bone pick, between each warp thread.



Figure 38

Beating in the weft: Octavia beats in the weft, plucking bone pick up against warp threads.

Once this first row of beating has been completed, the weaver tightens up any slack warp threads and pulls up on them. Then she holds the beater slightly on edge, and inserts the bone pick into the shed, under about two inches of warp threads. She plucks the pick hard against the warp threads (fig. 38). If necessary the weaver may spread out the warp threads slightly, where they come over the shed rod. This is to counteract any tendency of the weft to pull in on the width of the cloth.

The sword beater is now replaced by a shed stick. The llama bone pick is scraped across the threads in front of the heddle stick. A few threads at a time are lifted from the top of the shed rod and pulled up and past the heddle sticks threads. If necessary the weaver scores again, across the threads to lessen any sticky ones. The sword beater is slid under each group of threads as they are brought past the heddle strings. This is continued until all the threads have been picked up on the sword beater for the new shed, the shed-rod shed. For this entire process the warp is kept under tension.

As previously described, the pattern stick is gradually inserted into the first shed which is held open by a shed stick. Pattern threads are picked up and the pattern stick is slid under these, pushing the llama bone through. Once the pattern stick has been completely inserted the shed stick is removed. The pattern stick is set on its edge and the shuttle stick is inserted into the shed. The weft is then pulled into position. The pattern stick is removed. While the warp is under tension the sword beater is brought forward against the weft. The weft is then packed down in its shed. Any loose threads are pulled up and then with

the sword beater set on its side, the weaver pulls upwards on the warp threads with the pick. The sword beater is replaced with a shed stick and the weaver continues with another shed change.

This particular weaving has very little in the way of pattern. It has only two bands of pattern, unlike that of the Pisac woman. The main part of the decoration is from gaily coloured bands of warp stripes. The yarn used for the poncho is a commercially spun synthetic yarn, which is easily obtained in any of the local markets. The yarn is over-spun by the weaver before beginning warping. It makes it a little easier to work with. It still tends to stick but not as badly as if it had not been over-spun. However it is the qualities of increased durability that are most prized, with over-spun yarns.

## 2. Sacsahuaman Weaver

This, the first of the weavers observed, was found in a small hamlet consisting of several houses, lined up together on one side of the highway near Sacsahuaman, the Inca fortress above Cuzco. It was mid-afternoon on a glorious, hot, clear winter day. The woman was dressed very colourfully in one of the local costumes. Despite the heat, she wore a heavy woolen skirt and embroidered jacket. Over the jacket, and around her shoulders, she wore a complexly patterned manta. A manta is a short shawl with wide pattern stripes, generally folded double into a rectangle, wrapped around the shoulders and pinned in front, usually with a large blanket pin. The very gaily decorated costume was not the one usually worn every day, but rather the one best for fiestas

and dancing, (fig. 39).

The woman had set up her loom on a high bank in front of the houses and near the roadway. The loom was tied by four twisted and plied cords to stakes that had been driven into the ground. The rear two stakes were longer than the front pair so that the work was supported at an angle, slanting towards the weaver. This inclined surface made it easier for the weaver to work comfortably. The loom was tied at such a height from the ground, that a weaver sitting on her heels could rest her forearms on the loom bar while picking up the pattern. The weaver was making a manta, with very similar pattern to the one that she herself was wearing. The manta was being made in two pieces of rectangular fabric which would be joined together onto a square. The pieces would be woven separately by the weaver as four-selvaged cloth, rather than as one long piece and then cut in the middle and joined. Weaving the manta in two pieces means that two warps must be made and then threaded up on the loom, one after the other, a traditional method that has continued from prehistoric times.

The half manta on her loom consisted of a series of complex pattern bands. In the tradition of the area each band is quite wide and consists of a series of geometric motifs which have been built up into a complex geometric repeat.

The pattern is rendered visually more complex, and also less repetitive by the insertion of bands of different colour within the main motifs. This also is a common practice and was observed at Chinchero, and in a variety of finished articles while in Peru. The part of

the cloth already woven was wrapped around the front warp beam and a second or cloth beam. This kept the work area, that is, the section being woven, close to the weaver, so that stretching unnecessarily forward by the weaver was kept to a minimum.

The process description given below consists of two insertions of weft, starting with the shed change to the heddle shed. It was recorded during a half hour observation period.

Before beginning to change the shed, the weaver separates the threads from each other by scoring across the warp in front of the heddle strings with a curved llama bone. This loosens the threads which tend to stick to each other. The weaver's left hand then grasps the end of the heddle stick and she begins to pull the warp threads held by the heddle strings away from the other warps. The weaver gradually inserts the sword beater behind the heddles into the space that results between the warp threads. This is the heddle shed. The weaver then shifts her hand along the heddle stick and begins to pull up on the warp threads further over, so that the sword beater can be inserted deeper into the shed. This is continued until the entire heddle shed has been opened and the sword beater inserted.

The sword beater is then grasped with both hands and pulled forward towards the weaver, and the pattern stick that is already in the other shed close to the working edge. By having two sticks close together in alternate sheds the threads are forced to lie side by side

in position. This makes the pattern pick-up much easier. If the threads stick together while the sword beater is being pulled forward the weaver can score across the warp threads with the bone pick to free the threads in front of the beater.

During pattern pick-up, for each thread that is dropped from the shed-rod shed its partner must be picked up from the underlying heddle shed below the sword beater. Pattern manipulation in this weave (complementary) occurs in pairs, with one thread of each pair appearing on the face while the other appears on the reverse. As each section of the pattern is picked up the weaver slides a pattern stick through the shed and under the warp pattern threads that she has just picked. The weaver uses the thumb and first two fingers of each hand. The second finger is inserted in the shed, under the top warp threads, while the first finger sits on top of the threads, with the thumb, to secure the threads. When a thread is required from the left hand it is passed along by the second fingers to the right or holding hand. In the same way a thread from below would be picked up and passed to the right hand.

With the pattern pick-up completed the pattern stick now holds the complete pattern shed. The pattern stick is turned on edge to hold the shed open. The shuttle stick is passed through the shed and the weft adjusted in the shed so that the selvedge is even. The pattern stick is flattened and brought forward against the weft, then removed. The sword beater, which has been sitting in the shed behind, is brought forward against the warp cross to pack the weft in place. With the sword beater held flat in the shed, and using the bone pick, the weaver





Figure 39

A staked out loom, the weaver wears traditional dress.



Figure 40

Weaver beats in weft, using bone pick.

packs the weft in tightly, producing a small ridge in the warp (fig. 40). She pulls down hard with the pick against the weft between each warp thread. Then she inserts the pick in front of the sword beater and plucks at the warp threads, pulling them taut.

A pattern stick then replaces the sword beater in this shed. This leaves the sword beater free to be inserted in the next shed. The weaver scores across the warp, in front of the heddles to loosen the threads, preparatory to changing the shed. The shed rod is placed as close as possible behind the heddle stick, and the warp threads passing over the shed rod are pulled up and past the heddle strings and the other warps. The sword beater is carefully inserted, in front of the heddles, into this new shed.

The weaver begins the pick-up for the next row of pattern in the shed held by the pattern stick. As each section of warp pattern is picked up the second pattern stick is inserted into this new pattern shed. Once the whole row has been picked up the original pattern stick is removed, leaving the second pattern stick in the shed, ready for the passage of the weft. When the weft has been inserted and positioned, the second pattern stick is removed and the sword beater brought forward against the warp cross. If the warp threads should stick, preventing the sword beater from moving, scoring with the bone pick would help separate them. With the sword beater hard up against the warp cross the weft is beaten down with the bone pick, as previously described. The sword beater is then replaced with a pattern stick. The weaver pushes the

shed rod away from the heddle stick. Pulling up on the heddle stick she gradually clears a space and begins to insert the sword beater behind the heddles.

3. Gerardo Gusman Ramos

Tinta is a delightful town near Sicuani, across the Vilcanota river from the Cuzco-Puno highway, about three hours drive from Cuzco. It is an Indian town, and although on the Cuzco-Puno road and rail route it is little visited by tourists, because of its distance from Cuzco. This partial seclusion from tourist influence has resulted in the continuance of much of the traditional crafts. As well as several families of professional weavers there is an artisan at a workshop where the traditional campesino costume is made, both for everyday and for fiesta wearing. Several weavers were visited in Tinta, but only one was observed weaving. The others brought out their work and unrolled the looms to show what they were doing.

The one weaver who was observed at work was a man, Gerardo Gusman Ramos. He works inside his house. The door is left wide open to let in enough light for him to see what he is doing. The loom is tied to four short stakes which have been driven into the packed earth floor. The pairs of stakes are spaced widely apart, which suggests that they may also be used in the preparation of the warp. Both the warp on the back warp beam, and the cloth on the front warp beam are rolled up, to make a very narrow working area (fig. 41). The back warp beam is lashed



Figure 41

Horizontal staked out loom: it shows the tie cords attached to cloth beam.



Figure 42

Pattern pick up: the weaver holds bone pick in overhand grip.



to two stakes, but the front beam is held by two plied cords to the other two stakes which are some distance away behind the weaver. The weaver keeps a cloth on the front edge of the weaving to protect it from contact with his clothing, since the background colour is white. The weaver works, sitting on his heels with his knees tucked in under the loom.

The shed change pattern pick-up and one insertion of weft was observed. The shed rod is in place close behind the heddle stick and the sword beater is in the heddle shed just in front of the heddles. The weaver used a bone pick to do the pattern pick-up. He holds the pick, overhand, in his left hand (fig. 42). As he completes a section of pattern pick-up he inserts the shuttle stick into the pattern shed created on the bone pick. This holds these warp threads separate. He continues picking up the pattern in this way, working across the width, until the shuttle stick reaches from one side to the other. Where there is no pattern area, the stick passes through the weft shed held by the pattern stick. The weft is passed through the pattern shed and pulled even at the selvages. The warp threads passing over the shed rod are brought up and past the heddles and the beater is inserted in this shed. It is then brought forward against the warp cross and the weft behind that. The weaver uses the bone pick to pack the weft firmly.

This weaver was working a "rosas" pattern, which is traditional to Tinta. The pattern is worked in a supplementary-warp pattern weave. There are three main pattern bands. Another piece, by the same weaver,

in the Museum of Anthropology, U.B.C., shows smaller bands of these roses, also in supplementary-warp weave.

#### E. Comparison of Weaving Techniques

Each weaver had a slightly different approach in pattern pick-up.

The weaver at Sacsahuaman used her fingers only, gradually inserting a pattern stick into the pattern shed about two inches at a time. These were all the threads that she could comfortably handle at each time.

Octavia Sinchi, the weaver at Ollantaytambo, inserted the middle finger of her left hand into the shed to hold the threads, while she picked up the pattern with a bone pick. She picked up the entire pattern band before inserting the pattern stick into the pattern shed. Her manoeuvre was more complex than that carried out by the other weavers. She inserted her arm into the shed and grasped the point of the bone which she held. The pattern stick was pushed into a notch in the other end of the pick. By pushing the bone along the pattern stick was eased into the pattern shed.

As the weaver at Tinta picked up the threads on the bone pick, he slid the shuttle stick into the pattern shed, omitting one step and speeding the process. A. Howe reports the same procedure for one shed sequence in Lauramarka (1975: 40). After this step the other two weavers then inserted the shuttle stick into the shed held open by the pattern stick. Whereas Octavia used a wide pattern stick turned on its side, making a wide shed, the Pisac woman at Sacsahuaman could not do

this, since the tension on her loom was not adjustable. She passed the shuttle stick through a shed made by a narrow diameter pattern stick.

Although there are specific differences in the technique used on the loom woven pieces and the finger woven pieces, these are due more to a difference in scale than to a different approach in weaving. Differences of scale are more obvious in the weavings of Ollantaytambo than those of Chinchero. At Ollantaytambo the heddle strings were not attached to a heddle stick, although this was done at Chinchero. The bands woven at Ollantaytambo were narrower and did not need a heddle stick. Changing of the shed was accomplished quite satisfactorily without this addition, although it seemed to make the task easier at Chinchero. This latter fact may be due to the kind of yarn used as much as the width of the band, for I have woven several of the patterns observed at Chinchero and find the string heddles entirely satisfactory. In the Chinchero weavings the heddle stick seemed to be attached in the same way as for the larger weavings on the looms.

The pattern pick-up was done by hand as at Sacsahuaman, without a bone pick, but whereas Stefania Quispe used shed sticks Octavia Sinchi did not. Here the difference may lie in the fact that one weaver was at home with her equipment at hand, while the other weaver was away from home and had brought no small weaving tools with her. It should be noted that while the majority of weavers worked with two sheds sticks in the warp, Stefania Quispe used five shed sticks which doubled as

pattern sticks. Once all of these were placed as pattern sticks in succeeding sheds Stefania then began to insert the weft in each shed, packing in the weft with the next pattern stick. Her daughter, Sonia, worked with two shed sticks.

Although this study is concerned with one technique---complementary-warp weave---it should be noted that any of the weaving methods previously described would apply also to other related warp-patterned weaves. It is in the manipulation of the warps during pattern pick-up that the differences would occur, as well as in the preparation of the warp and the arrangement of the colours.

In summary there are differences in the weaving technique of each of the weavers observed. While the separation of the shed for the passage of the weft depends on the loom set-up, other differences are due more to personal preference on the part of the weaver. Stefania Quispe used several shed sticks, but she did not always do so. She said that it made the work go more quickly in this manner but no real difference in speed was observed when she took over her daughter's weaving. The Tinta weaver was more concerned with speed: Gusman estimated that it took him about twenty days to weave a patterned poncho, in comparison with Goodell's reports of from three to six months (Bird, 1968: 15). Weaving steps had obviously been reduced to a minimum. Octavia Sinchi worked without equipment such as shed sticks and beater in the narrow weavings, but this was no doubt due to lack of available equipment..<sup>3</sup>



These are the comparisons made possible by a few weeks of field research. They point out the value of the comparative approach for understanding a weaving tradition. However, until more weavers are observed, the particulars of personal choice in weaving cannot be properly evaluated.

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<sup>3</sup> I found in my own weavings that it was impossible to pack the weft as firmly by hand action without the aid of a wooden beater. The finished piece definitely looked looser and less compact.

## CHAPTER 6

### LEARNING AND INSTRUCTION

The children of the Andean highlands of Peru learn weaving in a different cultural tradition from that of North America. As both an art educator and a weaver I must appreciate these differences in their implications for learning and also in the way in which traditions are passed on from one generation to the next. This chapter deals first with how Peruvian children learn to weave, based on observations made in the field. Then a description is given of my experiences as an apprentice weaver, learning in the same way as any Peruvian child and finally I deal with the process of adapting these techniques to the weaving tradition of my own culture.

Children learn to weave in Peru by watching their elders. Eventually they are allowed to help, but there are certain requirements to be met before a child is allowed to do anything. While in ollantaytambo it was noted that although all the children and adults crowded around to watch the weaver at work, none of the very young children were allowed to touch the work in progress. Their curious fingers were pushed away. Even Octavia's own child, a little boy, was discouraged from involving himself in the work. He was expected to sit quietly by and watch, which he did most of the time. The one child who was allowed to help with the replacement of the shed rod which had dropped out, was about eleven or twelve years old.

She was the eldest of the girls there. It was indicated to her what she was to do, holding on to the shed stick while the shed rod shed was picked up. She was expected to stand by for a considerable period of time, ready to slide the shed stick gradually further into the shed, underneath the warp threads that had been slowly and painstakingly sorted out and picked up again. From this point on the little girl, Tomasina, was accepted as an assistant. However, this did not mean that she was going to start weaving. Instead she sat by the weaver, watching everything that was being done. Once or twice she was permitted to help spread the warp along the shed rod to space it more widely and compensate for the pull-in by the weft.

Later in the day when Senora Octavia prepared a small warp to demonstrate a variety of patterns and techniques, Tomasina was once more allowed to serve as assistant and help with the preparation. Most of Tomasina's tasks consisted of helping to pass the warp thread around the end sticks, or of holding off to one side a length of yarn that was not required for the current section. Despite the assistance that Tomasina gave she was not involved in the actual warping of the yarn. She was only assisting in much the same way that a young apprentice would have assisted in a medieval guild workshop. While not essential to the process, Tomasina's assistance made the weaving a little easier.

Octavia did not explain nor describe what she was doing to either Tomasina or her interested audience. If questions were asked she

would answer, but she did not feel it was necessary to offer any verbal explanation to the girl helping. If the child did not understand what was being done it did not matter. She would learn later if she watched and assisted. To a certain extent Tomasina was expected to figure out for herself how best to help. Some of the time she was told what to do. Any learning that took place was as a result of the child's own observations. In fact Tomasina stayed watching long after the other children had lost interest and moved away to play. She sat quietly, only helping when it was indicated that help was required.

Ultimately Tomasina also left, but it was not because she had lost interest. She was called away by her family to continue with her chores. In Peru, children are little indulged. They are expected at all times to pull their weight with any work that needs to be done. Despite her interest this particular girl will have no opportunity to learn to weave. None of her family do so, so there is no one from whom she can learn. A young girl would not be sent to someone outside the family for training. She would learn gradually, first from watching and then by helping all the things that it was considered necessary for her to know. In order for her to learn to weave, her father, mother, aunt or some other member of the family would have to be a weaver.

In Chinchero, Senora Stefania Quispe learned to spin when she was about five years old. She has treated her children in the same

way. The elder two girls have learned to spin, while the youngest is learning on a miniature spindle. Sonia, aged about twelve years of age (grade 6 in school), began learning to weave a few months previously. Originally she would have watched her mother while she worked, being allowed to help with the simple things, much as Tomasina did. Sonia began her weaving on narrow belts and bands that were for sale to the tourists who came to Chinchero for the Sunday morning market. These belts are made of handspun thick wool, which is quick to weave up and simple to work with. The patterns which Sonia was learning are similar to those which would be used on a larger piece such as a poncho or manta. Sonia has not yet been allowed to weave anything larger than these narrow belts. The several fine ponchos and carrying cloths that were around the place were the work of Sonia's mother.

Time, weather and other chores permitting, Sonia and her mother spent about two hours each day weaving, while I was in Chinchero. In order to learn Sonia sat on the ground near her mother (fig 43). The youngest child, a baby, was propped up beside the mother and left to her own devices while the other two worked. Sonia listened to her mother giving her the thread count, while she manipulated the warp threads for the pattern pick up. The directions were simple: drop one; lift one, drop three; lift one; etc. At the same time that she was giving these directions to her daughter, Stefania was working away on another design. Periodically the mother would put down her own work and take over her daughter's weaving to correct a mistake,



Figure 43

Sonia, seated on the ground near her mother, while learning to weave.

a.

b.



Figure 44

S'acas: Sonia's weaving design (a.), while (b.) shows an elaboration of the design in a belt by her mother.

or to find out how far her daughter had come with the pattern, if she could not see with a glance at what stage the weaving was.

Sonia was copying her mother's weaving actions, holding her tools in the same way and trying to rock the beater in the same fashion as her mother, but she did not yet have the control that her mother had, so as well as the occasional mistakes that her mother picked back and corrected, the tension was also not as even.

There was a slight difference in the set up for Sonia. Instead of having the work attached to a string tied around her waist, Sonia's weaving was pinned to the front of her cardigan. The other end of the warp was held by a metal stake that her mother had hammered into the ground.

In addition to observing the weavers and children at work, which I recorded in notes, slides and photographs, I was also given the opportunity to learn to weave myself. After two days of observation at Chinchero I was asked if I would like to learn to weave. Upon my enthusiastic response I was then asked what colours I would like for my band. Here cultural differences were immediately obvious. Whereas most of the bands woven by the senora and her daughter were very colourful, using at least six colours, I chose dark brown and white, to which the senora added red and green for the border colours. My band although attractive in my eyes, would seem drab to a Peruvian. Typical Peruvian colour schemes can be seen in the wider weavings of

each of the weavers observed.

My instruction began with Stefania making the warp for my band. She prepared it exactly as described earlier, while I sat and watched, asking the occasional question. Then while I continued to observe, she began the weaving. I was not allowed to begin weaving until one complete pattern repeat had been worked. Then I was given the work to tie around my waist. It took a few moments wriggling and a retying of the string around my waist before I was comfortably positioned and ready to begin the actual weaving. I discovered very early that it was important to exert a fair amount of tension on the warp. This makes even the manipulation of the warp threads for the pattern pick up easier.

Copying the actions of my instructor I opened the shed and slipped in the shed stick. While gradually pulling the shed stick towards me I tried to copy the weaver's thumb-scraping action across the threads in front of the stick to loosen any tendency the threads showed to stick together. This technique was not as easy to do as it had looked, but when I did manage to master it somewhat better I found that it made the process much easier. I also found that I had to lean my body weight backwards to increase the tension on the warp threads, otherwise I could not bring the shed stick any further. It helped if I held the shed stick at a very slight angle, which held the threads further apart.



Already, within the first few moments I had learned several points that were not obvious from observation alone. These may seem like very minor details, but it is in small things like this that the difference lies between a mediocre and a competent weaver. It is only by actually doing something that the importance of such facts emerges. There were other curious actions that I had recorded in my notes as I observed the weaver do them. I had no idea why they were done, and indeed one or two of them looked like bad habits. When asked about some of these things the weaver could only respond that that was how it was done. By doing it myself I often came up with the reason for the action, which at that point seemed obvious and sensible. However, if I had not watched it being done I might not have thought of it for myself.

Continuing with my weaving lesson, I then found out the reason for the rocking and scraping motion of the shed beater as the previous weft was packed down. I could not pack it as tightly as the senora had done, no matter how much I leaned backwards to increase the tension on the warp while I beat the weft in. Then I remembered the rocking motion that the senora had given the beater when beating down the weft. Immediately the whole process was easier.

When I reached the stage of the pattern pick up I was not left to figure it out on my own from the part already woven. As with the girl who was learning to weave the senora called out the directions, telling me to lift, drop or pass over each thread from one hand to

the other. While I was doing this she watched me closely to see that I did in fact pick up the correct threads. She did not continue with her own weaving at the same time as she had done with her daughter.

I wove one pattern repeat, and then indicated that I had had enough. I estimate that I wove for about an hour, and by the end of that time my back was aching. When I indicated this to Stefania she agreed that it was a common result of weaving for any length of time.

From this experience and from information given to me by the senora, I pieced together a picture of the traditional role of learning within the community. A young weaver learns from the older weavers, exactly as they were taught themselves by the previous generation of weavers. The forms and proportions learned by a weaver are passed on virtually unchanged. A young girl learns the designs by weaving them, following the verbal directions of her instructor. Once the young weaver has repeated the design many times and is familiar with it, so that she needs no further assistance with the pattern and can spot her own mistakes and correct them, she begins on a new design. This may sometimes be larger and more complex.

There is a logical progression to each of the designs, and this gradually becomes apparent through the constant repetition. Part of the logic is inherent in the structure of the weave. A warp thread floats for three to five rows of weft picks, without seriously weakening the structure, but then it must be tied down again by the weft. This

sets certain limits to the pattern. Generally the patterns develop along the diagonal, or in the form of horizontal lines interspersed with diagonals, as in s'acas (fig 45). Here in order to control the length of the warp floats, the solid of the reversed shapes is broken up by small splashes of the second colour. This creates a two colour, pebbled effect, which may be used for entire motifs and the contrasting ground.

In designs that do not have solid areas of colour, the development of the design arises out of the arrangement of small elements on the diagonal, into larger and more complex design forms. All of this is occasioned by the natural limitations of the weave structure. Examples of some of these designs can be seen in the appendix.

The first simple designs learned may recur later in the larger pieces. Sonia's design of s'acas occurs in a more ornate form in a belt woven by her mother. Here the simple repeat has been incorporated into a complex series of diamond shapes, that at first sight, do not seem to bear any relationship to the initial design (fig 44). The slowly developing sense of familiarity with the weaving patterns, will eventually lead Sonia from her small repeat, to the complexities of her mother's pattern.

This method of learning results in a specific approach to design. Because weavers learn by heart the designs of other weavers, there is a strong tendency to standardization of design elements, to the extent

that each woven article is clearly recognizable as typical of the village or community to which the weaver belongs. Each weaver within the community comes within the sphere of influence of the others. Thus any changes in pattern devised by one weaver will be known to the others, even though they may not use the new ideas themselves. However, those changes that do occur are slight, and tend to affect the proportions, or the placing of the design elements within the whole, rather than the invention of a completely new motif.

In an instance reported by Goodell (Bird 1968:15) the weaver originally had learned a design based on sixty warp threads, which she had adapted to one hundred and twenty threads. While this doubled the width of the design, and necessitated a rearrangement of the internal elements, it did not change the design itself, which is still recognisable to everyone as belonging to that village.

Naturally, each community is influenced by the others which are in close proximity, and the influences of one village may be felt in another. This results in a similarity of design within a localized region, in effect the regional style, but nonetheless, the designs are sufficiently distinct for them to be differentiated from each other by those familiar with them. Thus, while in Cuzco someone will point to a textile and say Ollantaytambo, in Ollantaytambo it will be pointed out that the textile is from Kwillyo, which is within walking distance of the town. In Kwillyo, one weaver will be able to work of other weavers.

O'Neale (1932), in a report which deals with another non literate art tradition, that of the Yurok-Karok basket weavers of northwestern California, notes a smiliarly conservative attitude opposed to any kind of change, including the invention of new designs. Thus, whatever alteration of design is done is very slight. The elaboration of details, which does not change the form of the design, is accepted and appreciated for the novelty that it gives to the designs, which must still be clearly recognisable (O'Neale 1932:98). Any individuality is expressed in the choice of designs and the way in which they are combined. To appreciate this kind of subtle variation it is necessary to be familiar with the designs in their traditional form. In essence, originality as we know it, is lacking, for the pressure within the group as to conform to the standards set and maintained for generations. Indeed, it is actually against the Indian law of the Yurok-Karok peoples to change the designs (O'Neale 1932:98).

While the Peruvian weavers may not have as literal a prohibition against change, the effect seems to be the same, with each generation conforming to the tradition and only small changes being made in the designs. Once these changes have been made, they in turn are passed on as part of the tradition. Thus, the designs evolve continuously rather than remaining entirely static. The current trend this century, is for a widening of pattern bands and an elaboration of the design elements within each band on the women's mantas.

By learning within a very structured design tradition each weaver,

whatever her abilities, gradually develops a design vocabulary with which she is completely familiar. Thus there is no stress involved in the selection of a design, so that even an uncreative weaver can produce a work of an acceptable quality and retain her reputation as a weaver. In this context there is no schism between the artist and the non artist as the designs are available to all. Where the difference does show is in the way in which the creative weaver will use the designs, still working in conformity with the tradition, to produce something that by local standards is new and innovative within the accepted limitations. The weaver previously referred to (Bird 1968:15), by doubling the number of warp threads used in the pattern band, had tackled a difficult design problem, which she solved eventually by an elaboration and rearrangement of the elements. Her design was new and innovative, acceptable within the limitations of the tradition, and was the result of much creative thinking and problem solving of an order that is hard to comprehend, for the entire process of creation, planning and solution took place in her head.

Weaving plays an important role in Andean village society where, until recently, it provided the only clothing. Despite the availability of manufactured materials and clothing, traditional handweaving still plays a role in the campesino's wardrobe, providing a form of self identification with one's community. A woman's reputation, and hence her status in the community, still rests to a certain extent on how good a spinner and weaver she is. However much joy a woman may take in her weaving it is still numbered among the other daily and seasonal

chores for which she is responsible.

The natural way in which spinning and weaving fits into the daily cycle of life is reinforced by the way in which children are introduced to it. While a mother weaves, her baby will be propped up nearby, watching all that is happening, much as Nanci was placed near her mother and elder sister (fig 44). As the child grows she is gradually immersed in the various stages of production. Even a very small child can help remove the burrs and dirt from the shorn fleece, and this the children are expected to do, taking full responsibility for their share of the labour. When slightly older, like Sonia's two younger sisters, neither of whom are of school age, they may be sent out as shepherdesses, to guard the sheep, during the day. While involved in this task, the younger ones may play, but the older ones may sit and spin or weave belts and bands<sup>1</sup>.

There is no separation of art from the culture in this traditionally oriented society. The textiles provide a community identification and continuity among generations, giving a sense of stability and order. The gradual immersion on the children in the tasks expected of them as adults, gives a continuity of learning and experience that is necessary for the transmission of the culture. It passes on the survival skills that the next generation will need. It provides a sense

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<sup>1</sup> Among the Navaho there is this same gradual immersion in the learning of spinning and weaving (Berlant and Kahlenberg 1977).

of order, and by defining roles and fitting the future adults for those roles it maintains the status quo of the society as it has been for generations. The gradual giving of full work responsibility to the children provides a smoother passage into adulthood, with the child already functioning as a productive member whose contribution is economically important to the family group.

#### The Researcher as Participant

The Peruvian weaving tradition is very much an oral and visual one. In a sense, by taking notes of the process, I am working within my own cultural tradition, rather than the Peruvian one which I am trying to record. This anomaly is insoluble, but it is indicative of some of the problems that occur when from one cultural standpoint I try to evaluate another culture. Collier (1967:i) refers to one aspect of the problem when he states that "our recognition of cultural phenomena is controlled by our ability to understand."

I needed a detailed record of the Peruvian weaving process, but did not have time to stay and study as a Peruvian weaver would have done, spending several years acquiring the skills by observation and practice. In order to retain the detailed information I had to make notes. To pass this information on to others I have to write down the descriptions and convert an oral tradition into aliterary one. By including some photographs I partially compensate by presenting some of the information visually, that cannot be so well presented in words,



but descriptions are still necessary to accompany the illustrations.

Through my experience of learning to weave in Peru, I have stepped across from my own culture, in the role of observer, to the Peruvian culture, as participant. Through participation I have learned of aspects of the weaving process that are not necessarily obvious to an observer. By doing I learn the techniques needed to accomplish certain effects. Small scatterings of the second colour in a large solid area of colour, break up the colour area, but they also strengthen the structure by cutting down the length of the warp floats. By using a warp in many colours, large design areas are broken up visually into smaller areas, through the changes in colour. Oddly enough, it is harder to weave a simple pattern in several colour bands than it is to weave an apparently more complex pattern in only two colours. Sometimes, designs that look simple, are not.

In the same way, because I have woven with the tightly twisted, Peruvian spun yarn, I am aware of the difference that the tight twist makes to the weaving process. It is not just a matter of getting a longer wearing and more durable finished garment. By twisting the yarn very tightly, the Peruvians counter some of the wools natural tendency to stick to the neighbouring lengths of yarn, which makes the shed changes easier.

By practice I am gradually beginning to comprehend the versatility of technique and the inherent limitations. To date most of my weaving

has been of narrow bands, for it takes time to acquire the kind of skill that my instructor demonstrated. I am handicapped in my weaving by not having a weaver sitting beside me calling out the thread changes, until I have thoroughly learnt the steps. In order to be able to freely adapt the patterns and understand how the Peruvian weavers made their changes and innovations in the design elements, I have to become sufficiently familiar with the patterns to be able to move around freely within the designs myself. This will take time and practice.

Unlike the Peruvian weavers I can sit down with pencil and paper to draft a design on graph paper, and this is basically how I now have to work. But eventually I hope to be sufficiently familiar with the designs to begin my own development. There are two directions in which I may go. One involves working within the cultural tradition of the Peruvian weavers and accepting their established limitations in order to gain a better understanding of how the materials are prepared and the tools used, and also the design problems and aesthetic decisions that are inherent in the original production of similar articles.

By this approach I gain a better understanding of the problems faced by artists working in an oral tradition. This practical, participation approach is becoming increasingly important in North American Indian art studies, where it is referred to as "artefaking" (Holm 1977), that is, the imitative making of a carving, basket, weaving or other art object, in order to better understand not only how it

was made, and the technical problems that were involved, but also more about the aesthetics of the artefact in the context of the manufacturing culture.

Similarly, in a discussion of Washoe basketry, Cohodas (1979) himself an "artefaker", notes that design composition was much more consistent for each artist than the techniques they employed.

Secondly, working with elements from Peruvian designs, I am using them in a way that is entirely personal and within my own cultural traditions. The ideas are there to be used as a starting point, and provided the artist makes her own artistic decisions the finished works will be an unique expression of the artistic culture within which the artist lives.

This must be born in mind when looking to the works of other cultures for inspiration. The paintings that Picasso produced as a result of his exposure to African sculpture, while retaining some of the essential qualities inherent in the carved masks, do not look like copies of African masks. Picasso extracted what he wanted from the pieces and used them in his own original way.

Through participation in the weaving tradition of another culture I am more aware of the nature of the designs and how they can be developed within the strict limitations imposed by the Peruvians. The nature of the weave itself and the versatility of its structure

become more apparent as I become more familiar with it, through practice. A complete exploration of the many possibilites that the weave and the loom permit, still requires more time than I have yet been able to give, but I find the future developments exciting.

## CHAPTER 7

### CONCLUSION

We have seen that the Peruvian textile tradition began far back in prehistoric times with the introduction of twining and netting techniques. With the advent of loom weaving, patterning techniques were developed by floating warp threads across the surface of the material. As other weaving techniques were developed the warp-pattern weaves occupied a more minor position than their intricacy warrants. Closer study of archeological textiles and readings in the early Spanish chronicles suggests the presence of two separate textile traditions, one functioning as elite art, with particularly fine embroideries and tapestries, the other operating on a lower level as the art and clothing of the peasants. From an examination of prehistoric textiles in museum collections and from contemporary pieces seen and collected in the field during my visit to Peru in 1978, it is obvious that while the elite art changed radically from culture group to culture group, the warp-pattern weaves have endured with a continuity of tradition that extends back over almost four thousands years.

The continuous warp loom which appears virtually unchanged since prehistoric times, is a very simple piece of equipment which may be set up in a variety of ways, depending upon the personal preference and requirements of the weaver. Several different set ups were observed in Peru. The large pieces of cloth produced on this loom

for mantas and ponchos are identical in structure to the small blots and bands, produced with little or no tools. The loom is a versatile and adaptable piece of equipment, with the added value of being entirely portable, requiring little or nothing in the way of material to make it.

In a stratified society where art serves the function of identifying the elite, it functions in a divisive way, emphasizing the schism between the elite and their non elite supporters. In this context, innovation and creativity are encouraged. In any stratified society, on the lower stratum the people will still be doing cohesive art work within their own traditions.

So what happens when there is a conquest? The elite art is replaced by that of the conquerors, as happened with the status tapestry techniques of the Incas. The lower class continues to make its own art, slowly showing signs of the influence of the new elite art, but continuing with its own cohesive forces, where tradition is stronger than the force for originality. With the coming of the Spaniards the Inca elite art was destroyed, along with the complex system of government that supported its manufacture. The peasant art continued, with Spanish inspired influences gradually appearing, so that today, while few of the motifs used date back to prehistoric times, the techniques have remained unchanged, as have the continuous warp looms.

The slow absorption of new materials and ideas seems due to the nature of the transmission of knowledge in a non literate society.

Weaving, and all other cultural aspects, are taught both visually and orally, by example and are learnt by heart. The weaver practises the designs until thoroughly familiar with them, and each weaver in the community possesses the same design vocabulary. This encourages the pressure to conformity and the standardization of designs. Radical changes are frowned upon. Weavers show their creativity by the choice of design, and by varying the proportions and elaborating the internal elements of the patterns. The weaver builds on a memorized pattern. Some minor innovations will be accepted by others of her community, allowing the style to evolve slowly, with tradition dominating over innovation and providing a much needed sense of creativity.

A detailed comparison of the weaving techniques of each of the weavers observed shows a wealth of variation in approach, which is not apparent in the finished fabric, but with this record to add to what has already been done, it may be possible to carry out a thorough comparison of all the weaving variations in the Cuzco region and elsewhere in the Andes. From observation of the weavers in Peru it is apparent that anthropologists have been too ready to assume an uniformity of weaving technique as well as design. Too little allowance has been made for the fact that weavers are individuals, not automatums, and as such will exhibit a wide variety of ways of weaving, even using the same loom. I was better able to appreciate the individuality of the weavers after my own experiences of learning to weave while in Peru.

This concept of the researcher as participant, represents an artistic and educational aspect of the study of primitive and prehistoric cultures that will be of assistance to archeologists, anthropologists and art historians who are working in the field. Too often confusion has been caused in studies by failure to take into account the natural variation in technique that may be the result of personal choice or inclination on the part of the weaver. There has been a tendency to assume that articles produced within one culture will be all produced in exactly the same way, using the same technique.

A. Rowe (1975) refers to this concept of uniformity in her discussion of the weaving processes of the Cuzco area. She assumes that the variations in technique are based on prehistoric differences in cultural background. It has been assumed that the Quechua traditionally wove on the back tension loom, while the Aymara used the staked out loom (O'Neale 1949: 115), but since these are merely different set ups of the same continuous warp loom, this is not necessarily the case. Many of the differences may be due to personal preference in method of working, which has since been enshrined in tradition.

Through direct involvement in the learning experience, as a weaver as well as an observer, I am attempting to bridge the gap between two cultures where the learning traditions are different, and come to some understanding of the function of the weaving experience in Peruvian terms. If art is looked at as an interaction of tradition and creativity, in a non stratified society, such as the Andean one, tradition will dominate over originality, as has happened in the Andes, and in other non literate societies. Thus to ask an Indian child from this



cultural background to produce an original work of art, is fighting against his cultural experiences.

From my study of the contemporary Peruvian weaving tradition I have the impression that its continued existence is due to the conservatism of the weavers concerned. They still have a strong feeling of pride in the continuity of their cultural tradition, and this is one of their major strengths, that has permitted the tradition to survive for so long. Working naturally within this tradition, a Peruvian child can make judgements as to the quality of the weaving. The criteria are simple, they include the obvious points of how well the article is made, whether its pattern fits the space, and how well it fills the function for which it was made.

While the Peruvian approach to art is not that of the Western world in the twentieth century, by being aware of how other cultures treat art and learning, we may be able to see better how we handle art education in our own society. Regrettably, there may be only a little more time in which we can so observe the Peruvian tradition, for under the pressure of a changing lifestyle and changing economic pressures, the weaving is dying out. The difference in the number of weavers whom Goodell reported and those whom I managed to find, show that the decline is accelerating. If more research is not carried out soon, there may be no Peruvian textile tradition left to study.

APPENDIX A

THE COMPOUND WEAVES<sup>1</sup>

In a compound weave there is more than one set of either warp or weft elements, the use of which in one face need not affect the structure of the other face.

Supplementary warp weaves are those in which warp threads are supplementary to the ground weave. These supplementary warps are added to produce patterning. If they were dispensed with, the fabric would still exist (fig. 45). The pattern warps are brought to the face of the fabric between regular warps, interworked briefly with the ground weave wefts and returned to the back.

Complementary sets of warps

When two or more sets of warps are co-equal in the fabric structure they can be described as being complementary to each other. The structure itself is compound and can be either double-faced or two-faced.

In complementary-warp weaves two sets of complementary warps can interlace with a single weft to form a coherent weave structure in which there is no ground weave as such. The two warp elements play equivalent and reciprocal parts on opposite sides of the fabric. In the simplest form both sets of complementary warps maintain a 3/1 order of interlacing, and form 3-span floats in alternate alignment, each on its own face. If the warps are sufficiently compacted only one colour will show on each face (fig. 46).

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<sup>1</sup>Paraphrased from Emery (1966: 140-54).

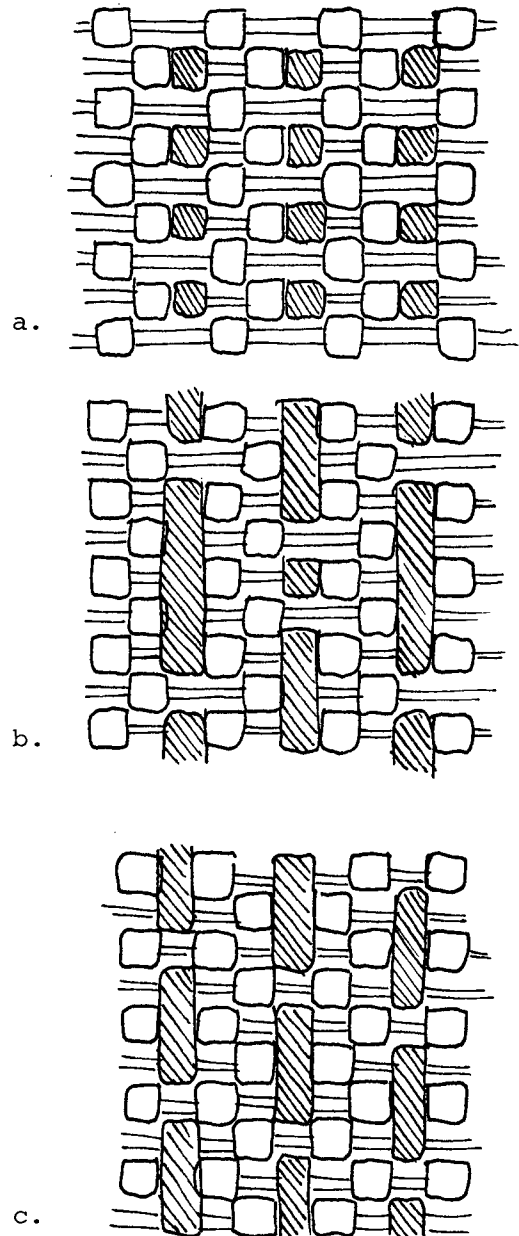


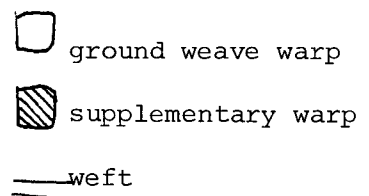
Figure 45

Supplementary-warp weave structures

a. introduction of one colour in plain weave.

b. supplementary warp floating over several wefts, between pairs of ground warp.

c. supplementary warps floating in simple pattern, between paired ground warps.



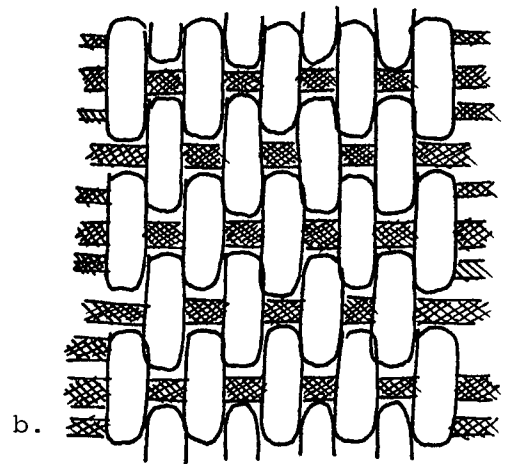
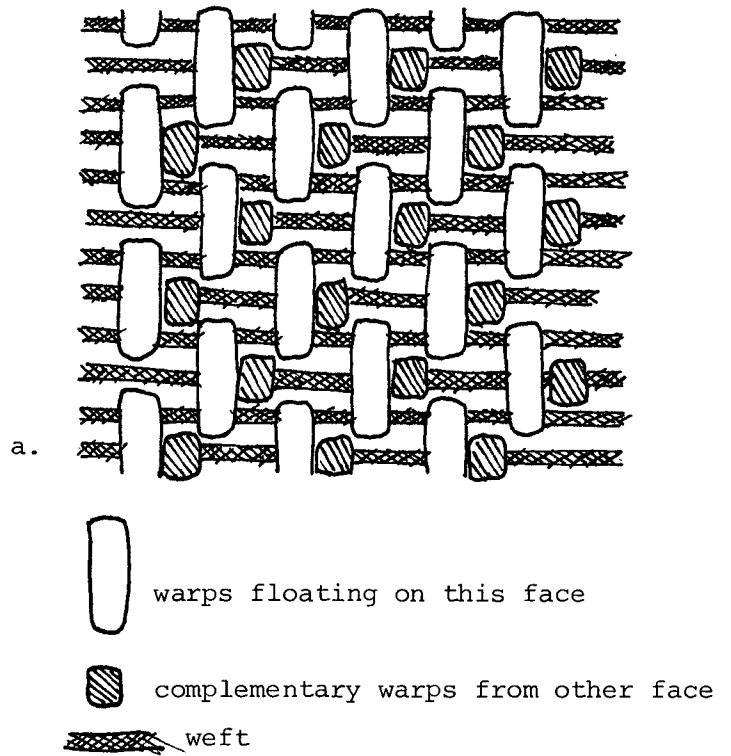


Figure 46

- a. structure of one face showing warp floats and the complementary warp threads from the other face.
- b. when compacted the warp floats hide the complementary warps from the other face.

## APPENDIX B

### THE LOOM

1. The continuous warp loom consists of several parts which are listed below (fig. 47).

1. warp bar
2. lashing which secures warp to the warp and cloth bars
3. shed rod
4. heddle stick and heddle strings
5. sword beater and shed or pattern sticks (not illustrated)
6. cloth bar
7. tie cords
8. warp

weft stick is not illustrated

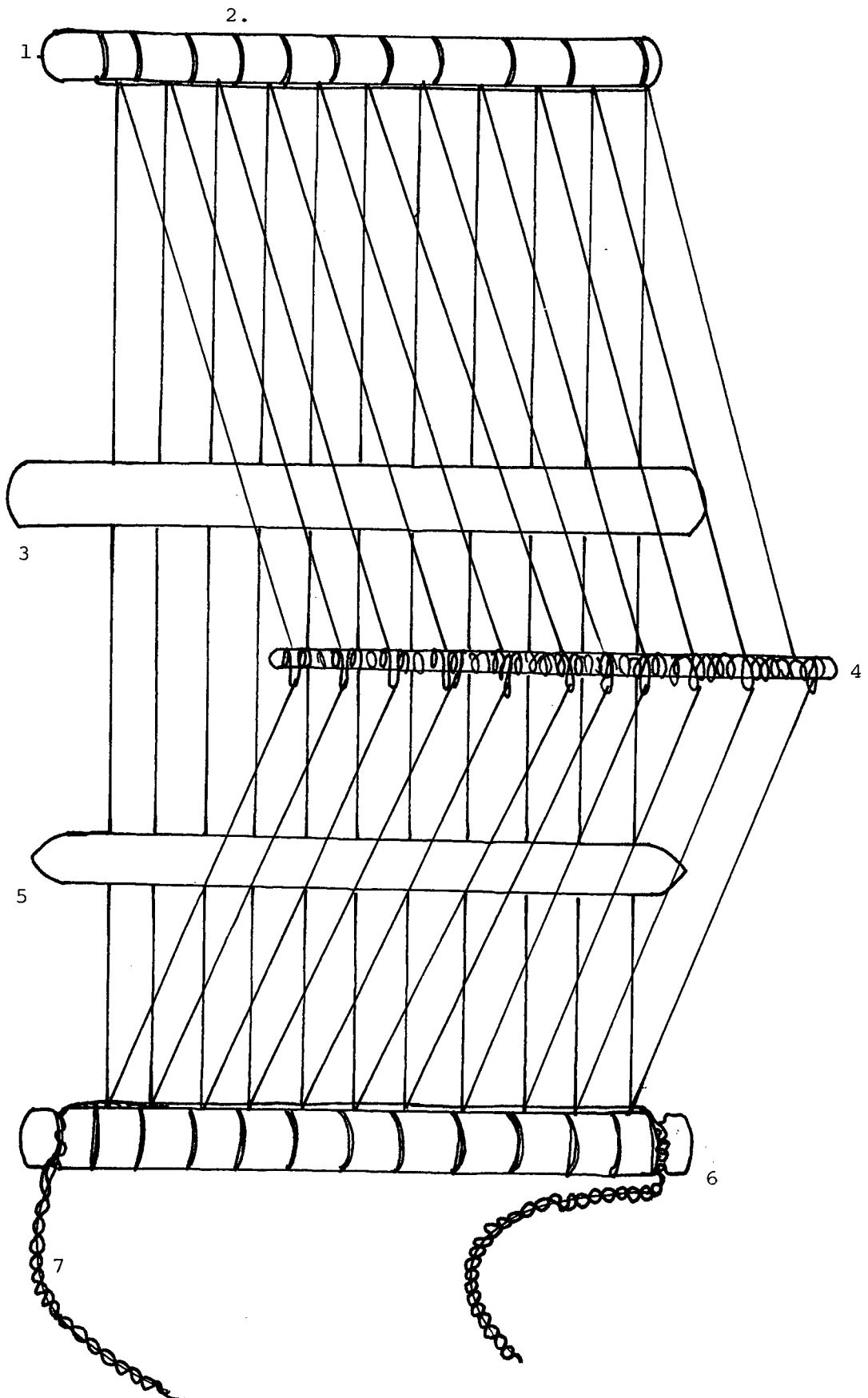


Figure 47.

## The Names of the Loom Parts

In the Quechua language although there is a name for each part of the loom, there is no word as such for 'loom'. The nearest to a name is that given by Stevenson (1974: 6) in his Santiago de Chocorvos study: awanakuna, which Stevenson translates as "warp thingummyjigs." The word is broken down as: awa--warp; na--instrument of action, or hesitation form; and kuna--pluralizing suffix. A. Rowe in her 1975 study gives the word awana as a collective word for the loom parts, but states that it does not seem to be equivalent to the English word loom. A. Rowe also gives the word of awa or awana k'aspi.

Although all the weavers who supplied names for the loom parts spoke Quechua, there are many variations of terms for each part. Included in figure are the names which I collected at Sacsahuaman, and in Ollantaytambo, plus those of Stevenson (1874), from Santiago de Chocorvos, those found by A. Rowe (1975) in the highlands in the Cuzco region, and by Andrada (1976) also from the Cuzco region.

It is apparent that more research needs to be carried out, weaver by weaver, in order to discover some of the reasons for this confusion in terminology. It is possible that in the case where a completely different word is used, that the root or origin of the word may be in another language, such as Aymara, or one that was used locally before the Inca enforced Quechua as the official language. On the other hand, some of the variations may simply be due to the natural development of any language to its own dialect terms.

QUECHUA NAMES FOR THE LOOM PARTS

<u>No.</u>	<u>English</u>	<u>McRobb</u>	<u>A. Rowe</u>	<u>Stevenson</u>	<u>Andrada</u>
1	warp	allwi	allwi	awa	
2	weft	luwa	mini	mini	mini
3	loom bars	chichi	awana k'aspi	awa pallqa	
4	cloth bar	k'empina k'aspi	kaki	awa pari	
5	shuttle stick	kjuma (k'uma)	mini	kumana	mini gaspi
6	pattern stick	Kjata pallamarac		khallwa	kallwa gaspi
7	sword beater	kjallwa	khallwa or ruk'i	kallwa	kallwa gaspi
8	heddle	kudwa	illawa	illawa	illawa
9	bone pick	ruk'i	ruk'i or wichuna	chuqchi	wichuna or tullu rhuki
10	tie on cords	mini			
11	tension cords	waskja sogu			
12	tie down stake	staca (Sp.)	takarpu or estaca (Sp.)		

An Ollantaytambo variation for the cloth beam is illyawa k'aspi, and a Chinchero variation for the tie down stake is tacaro.

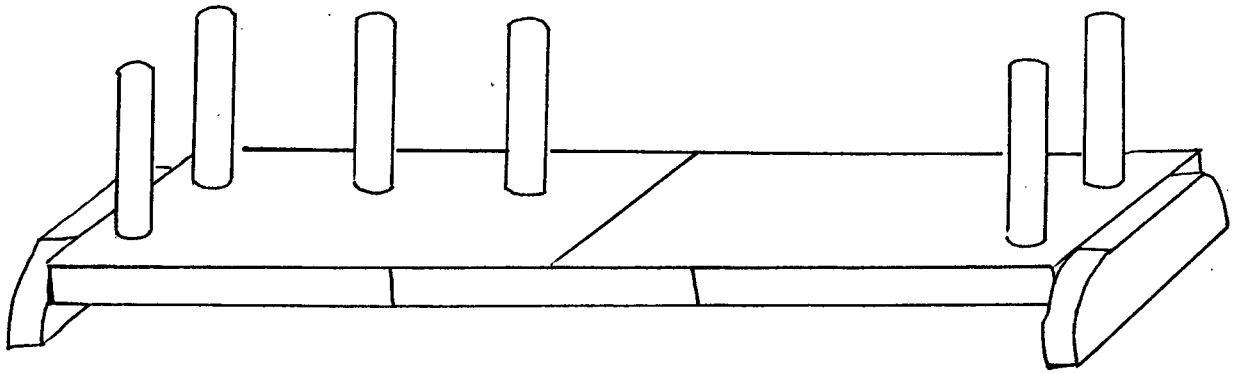


## APPENDIX C

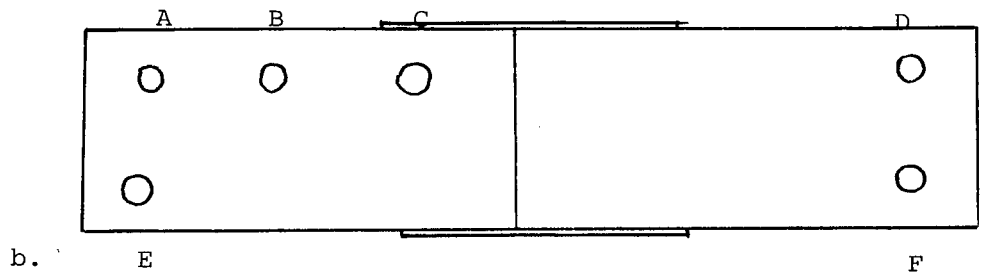
### WARPING FRAME

To help me make the warps as demonstrated in Peru, where two colours are warped at the same time, my father built a warping frame to my specifications (fig. 48a). Rather than be limited to short warp lengths for weaving, two extra pegs were placed beside pegs A and D (fig. 48b). This idea was taken from a warping board seen in the collection of the Museo Nacional, Guatemala City.

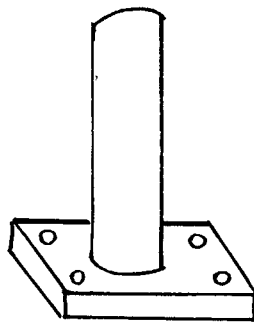
The pegs were made from one inch dowelling and for greater strength, these were screwed to a wooden base, which in turn was screwed to the underside of the board (fig. 48c). The entire warping frame was constructed so that it can be dismantled by removing the retaining screws. The board itself is made of two twenty inch pieces, joined on either side by a T shaped connecting bar (fig. 48d).



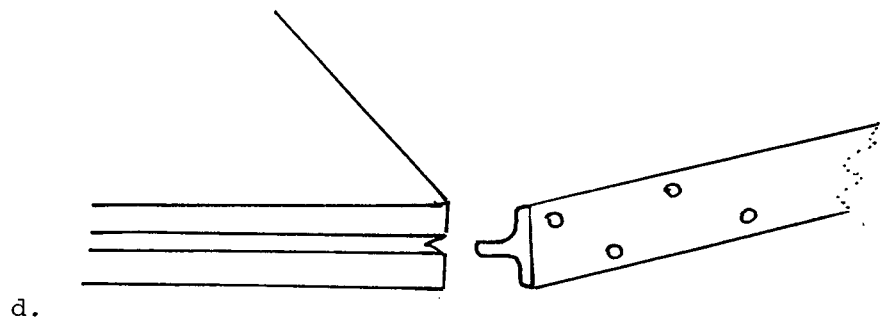
a.



b.



c.



d.

Figure 48.  
Warping frame

## APPENDIX D

### WEAVING DESIGNS

The weaving designs for which graphed patterns have been included are taken from contemporary and prehistoric belts and bands. They are all in complementary-warp weave in two colours. A variety of simple diamond designs have been included to show how a weaving design could be varied, without changing the overall appearance of it, in conformity with the Peruvian design requirements.

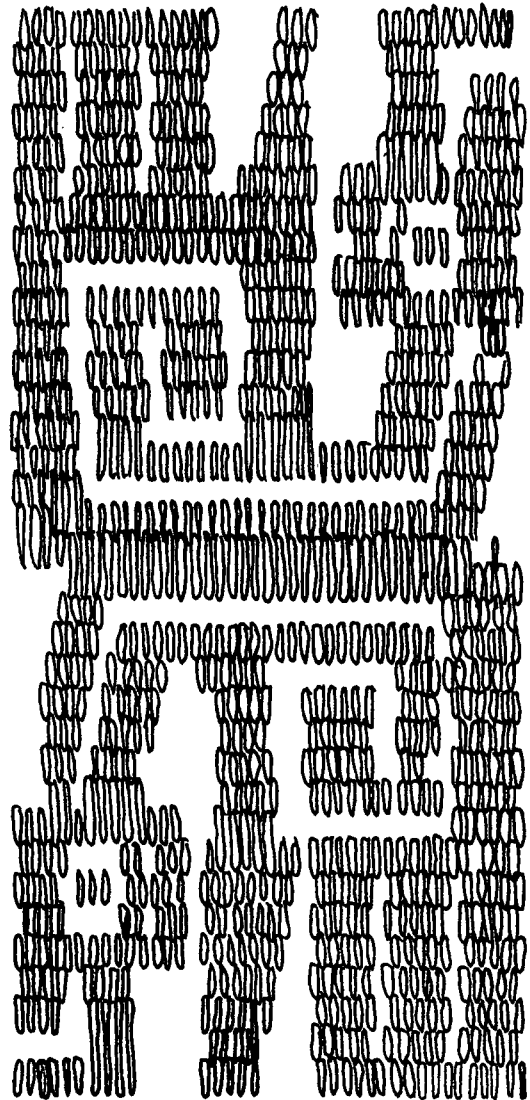


Figure 49.

bird motif in warp floats from Huaca Prieta  
(drawing after Bird )

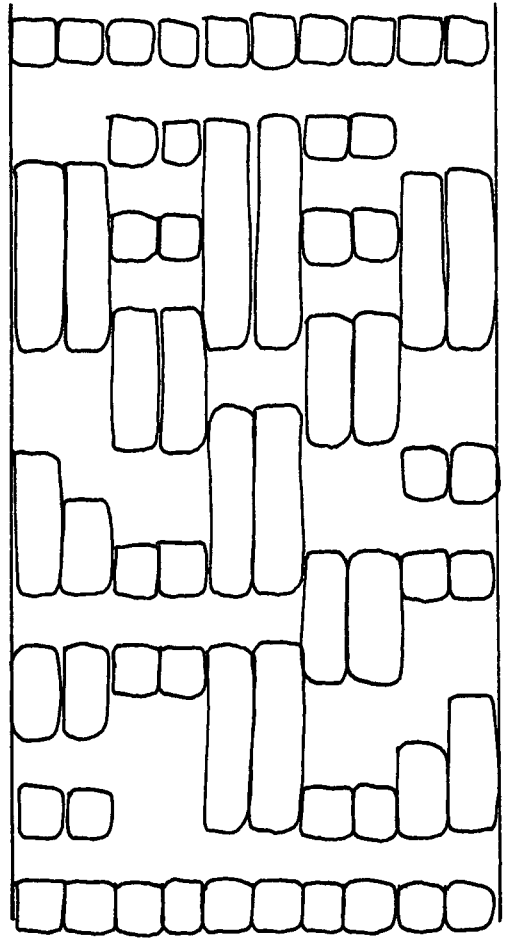


Figure 50

Design of a small feline from a prehistoric band from the Ocucaje site in the Ica Valley ( King 1965: fig. 22).

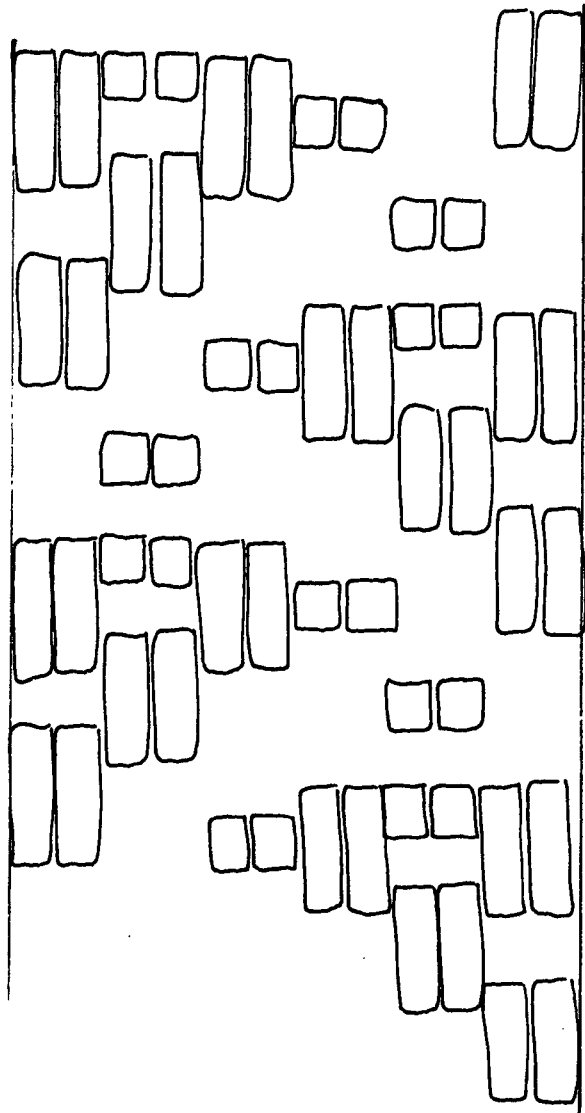


Figure 51

One of the designs woven at Ollantaytambo.

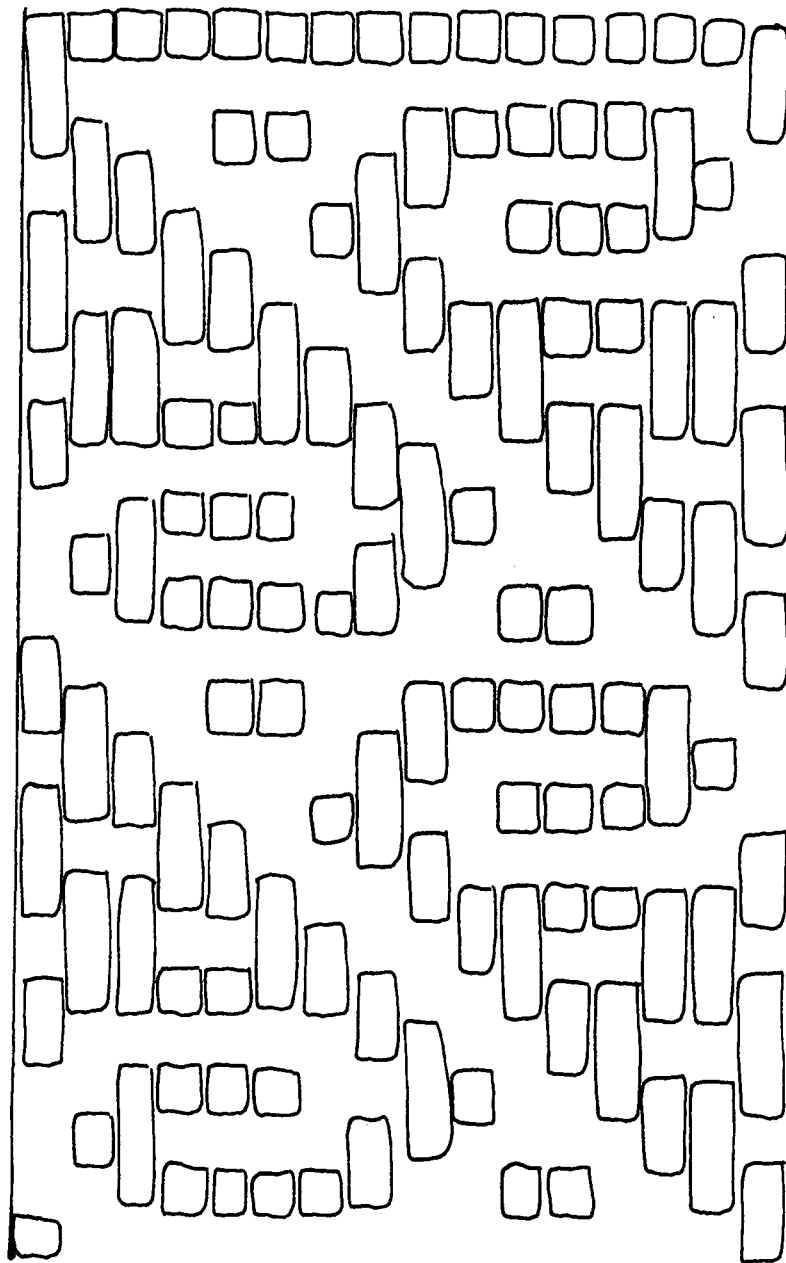


Figure 52

S'acas, Sonia's design form Chinchero

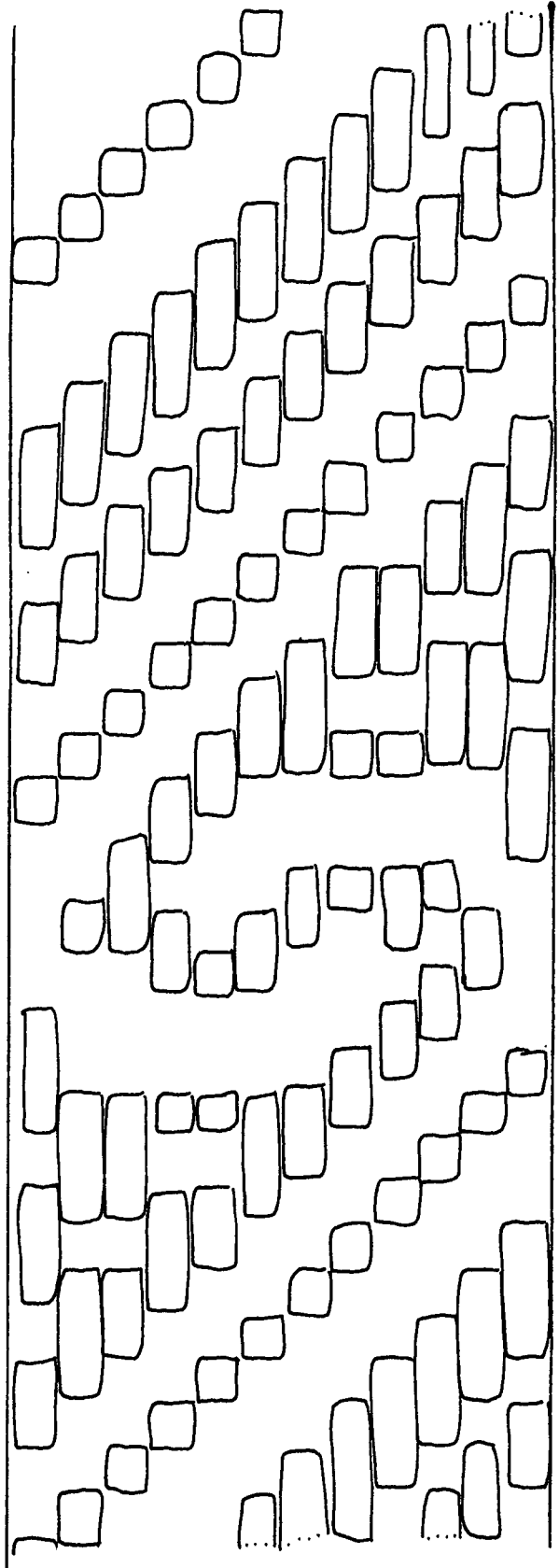


Figure 53  
Variation of s'acas,  
woven by Stefania.



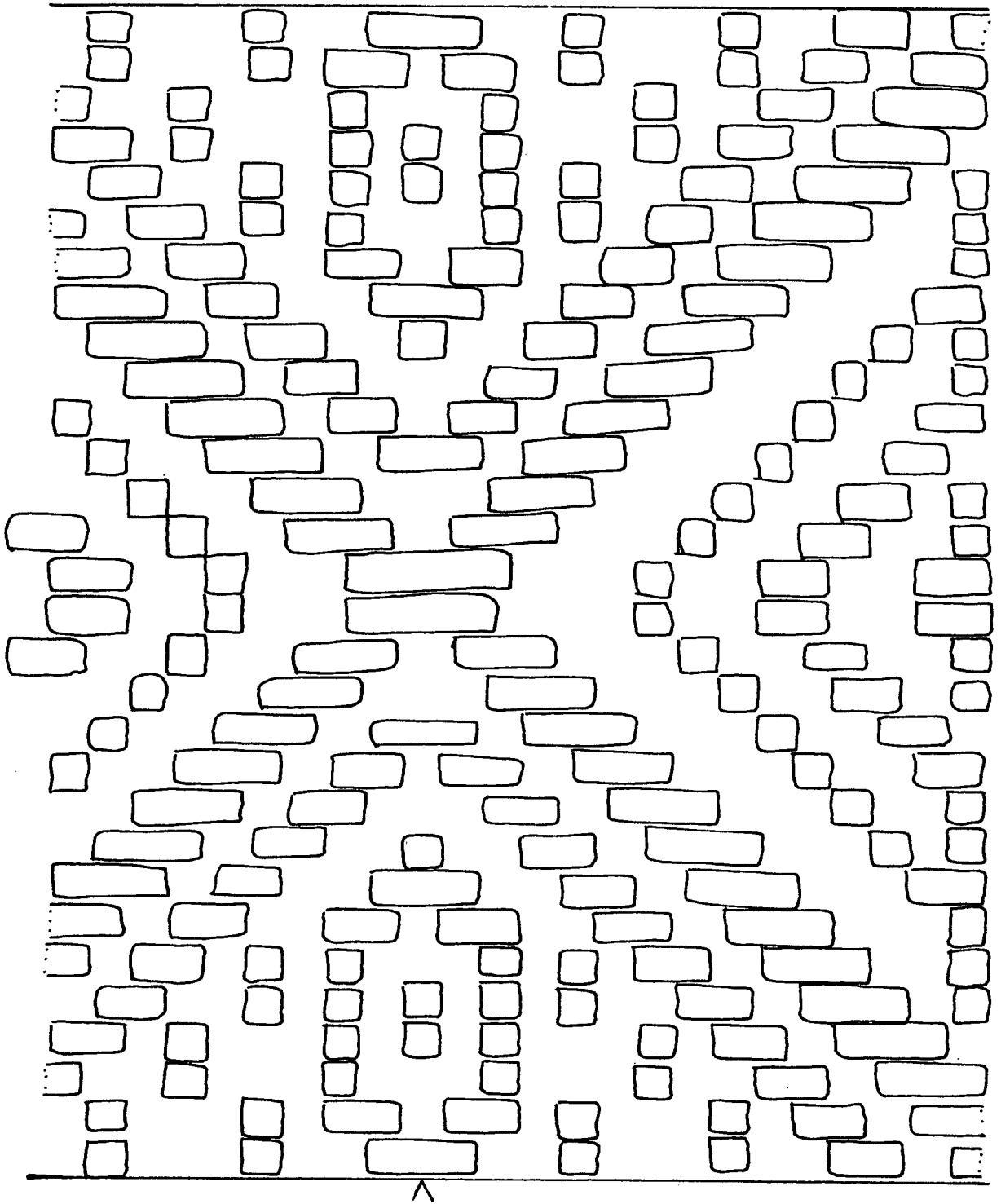


Figure 54

Detail of a complex diamond repeat from Chinchero

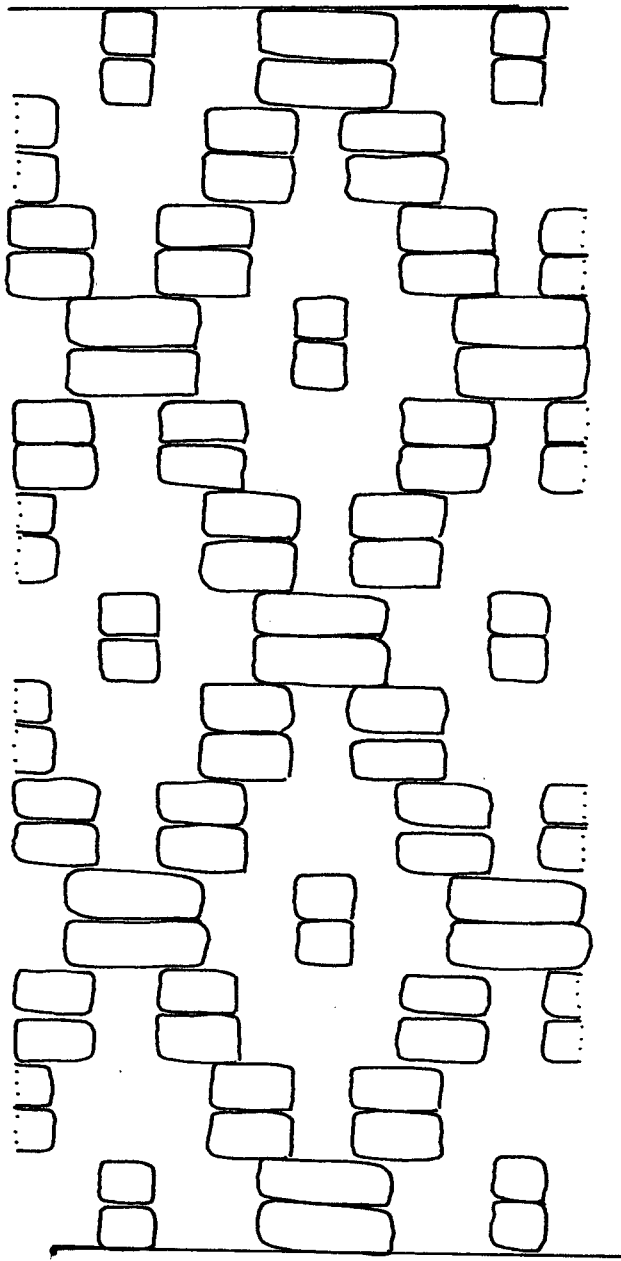
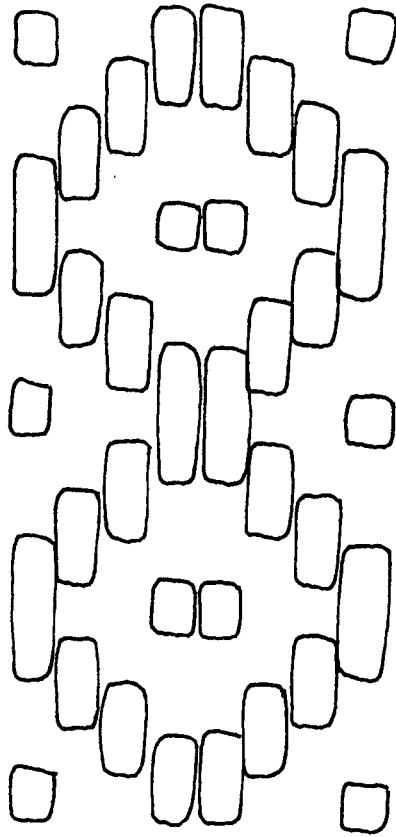
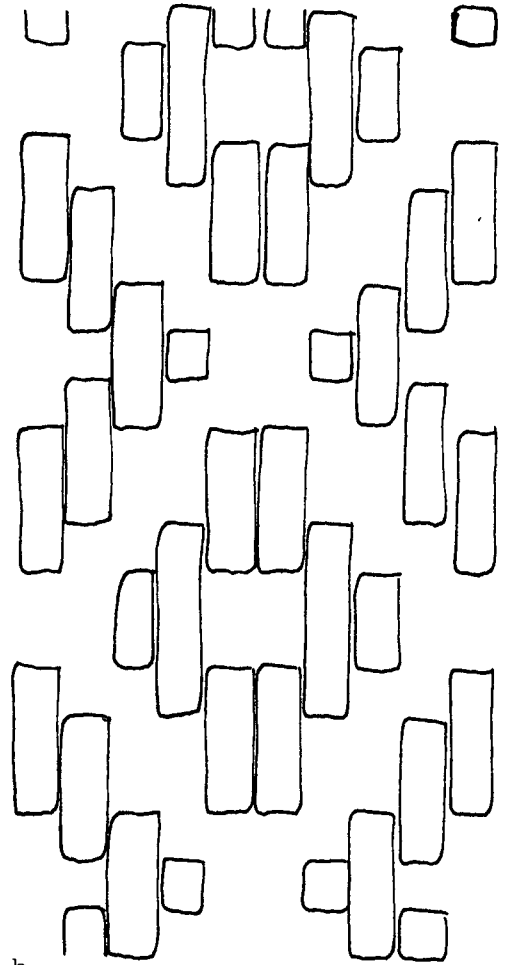


Figure 55

Multiple diamond design from a belt woven in Tinta  
(In the collection of the Museum of Anthropology, U.B.C.,  
Vancouver).



a.



b.

Figure 56

Two designs form narrow bands woven in Tinta.

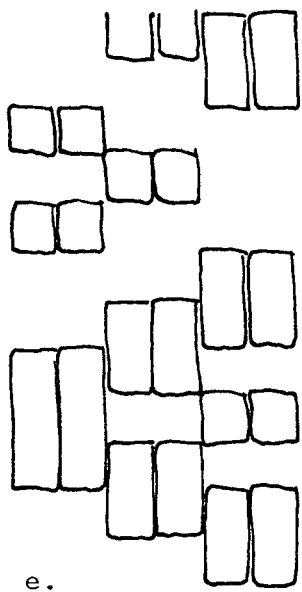
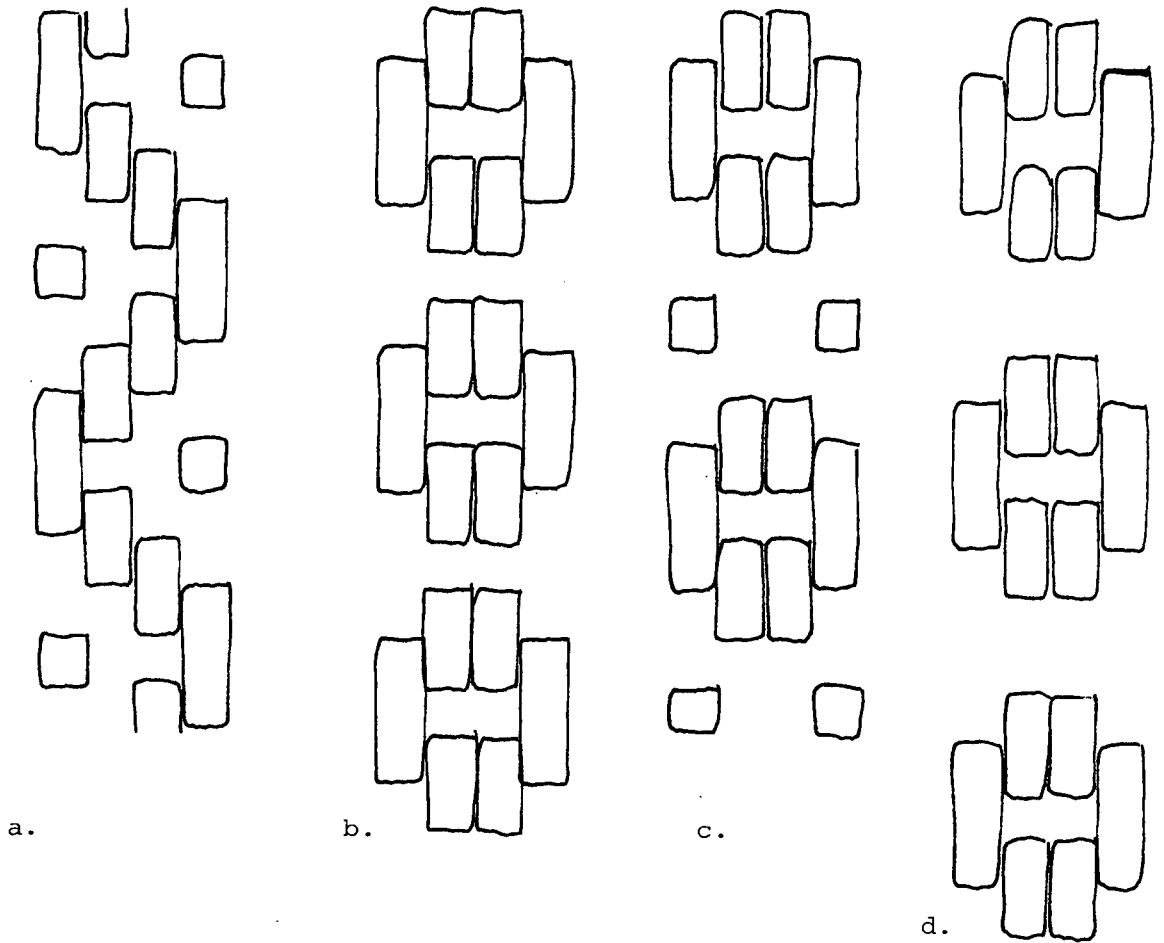


Figure 57

small diamond motifs, a-d from Tinta, e. in the collection of the Royal Ontario Museum, Toronto.

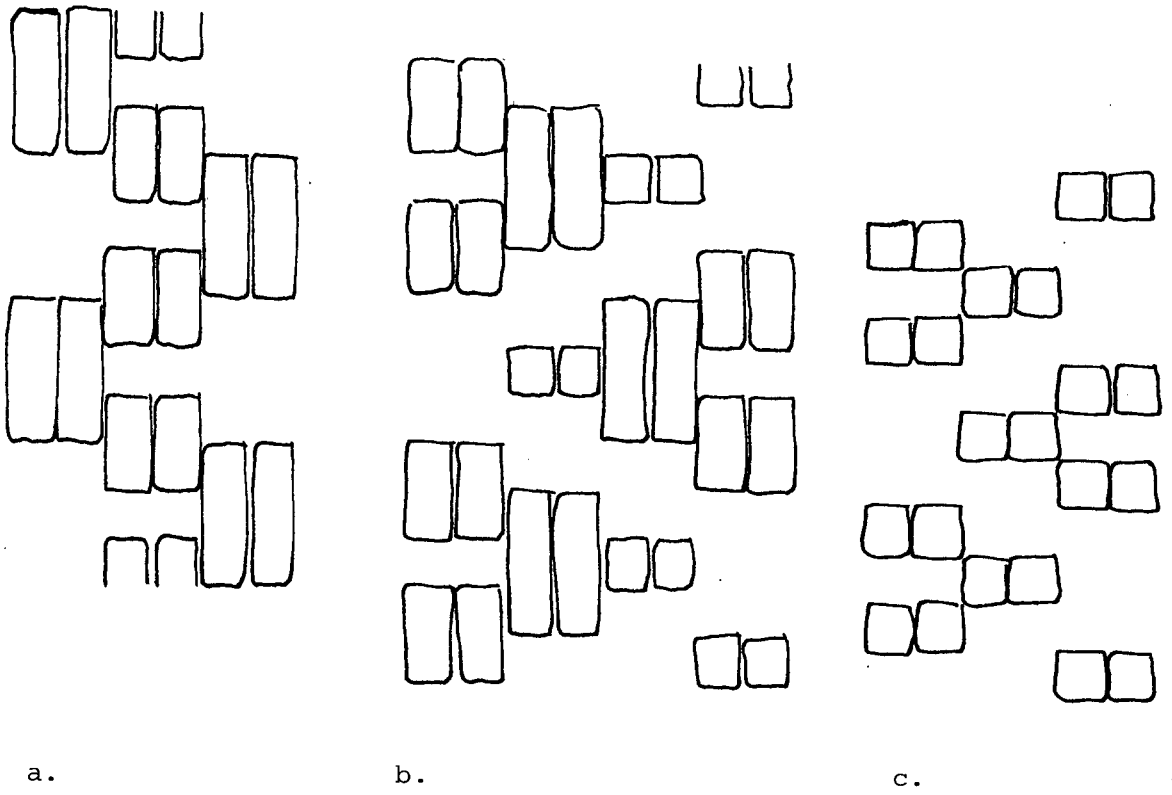


Figure 58

Bands of patterns from a bag in the Royal Scottish Museum, Edinburgh.

GLOSSARY

Appreviations: Que. - Quechua  
Sp. - Spanish

- AWASQA (awaska) the cloth produced by the peasant weavers for their own
- AKLLA-KONA house of the "chosen women" of the Inca, young girls who were kept in convent-like seclusion and trained as weavers, guardians of the temples and shrines, and as the wives of nobles.
- ARTES TIPICOS Sp. for the local folk art.
- AYLLU the local clan grouping of the Incan and Quechua people, a local unit of political and economic organization.
- AYMARA the descendents of the Colla, one of the subject peoples of the Inca, living in Southern Peru and Bolivia, speaking the Aymara language.
- BROCADE discontinuous supplementary weft techniques, used to create small areas of pattern.
- CAMELID FIBRES fleece of the indigenous animals of Peru, the alpaca, llama, vicuna, and huanaco or guanaco.
- CAMPESINOS Sp. term for the peasant Indians.
- COLLA subject tribe of the Incas, who lived in the southern quarter of the Inca Empire, and were only partially subdued at the time of the arrival of the Spanish.
- COMPLEMENTARY-WARP WEAVE structure in which two sets of warp elements interwork equally.
- CUZQUENOS the men of Cuzco
- BAYATA Sp. treadle loom woven cloth in plain weave.
- BAYETILLA commercially woven cloth, generally in twill weave.
- DOUBLE CLOTH fabric structure in which three or more sets of elements interact to produce separate faces.
- FINGER WEAVING weaving, generally of narrow bands, in which fingers are used for the warp manipulation with generally no tools.
- GUAZE WEAVE structure with temporary displacement of warps producing a lace-like effect.
- HACIENDADO pertaining to the haciendo or ranch. In this instance refers to a style of dress which carries higher status.
- HEDDLES, HEDDLESTRINGS devices used to affect opening of the shed in weaving.
- KORAKA Que. Inca official on local level, responsible for overseeing community of
- KUMPI (Qompi) Que. Inca status tapestry weaving.
- MESTIZO Sp. Native of part Indian, part Spanish blood.

- MITTA Que. Inca system of feudal labour, performed in return for right and privileges of goods and land.
- PALO Sp. stick, refers here to the shaft of a spindle.
- PLAIN WEAVE weft passes alternately over and under each successive warp.
- PUSHKA Que. spindle.
- PUNA Que. high plain area up to 15,000 feet altitude
- QUECHA Quechua speakers who are descendents of the Inca people, living in Peru.
- QOMPI-KAMAYOC Que. weaving specialist in Inca times, who wove fine tapestry. (also Kumpi-camayoc)
- ROSAS Sp. roses
- SHED temporary opening between two plains of warp, for insertion of weft.
- SHED ROD stick used to separate one shed of warp.
- SPRANG working with a set of elements stretched between two cords, so interlocking of threads takes place at both ends simultaneously.
- SUPPLEMENTARY-WARP WEAVES where an extra set of warp threads interacts in ground weave to produce pattern.
- TAPESTRY pattern produced by discontinuous weft-faced weave.
- T'PANA Que. large blanket pin, used to fasten manta.
- TWILL WEAVE float weave characterized by diagonal alignment of floats for which a minimum grouping of three warps is needed.
- 2/2 TWILL interlacing on the diagonal, under two and over two, but where warp count is higher than weft count, fabric will be warp-faced.
- TWINING two twining elements act together, enclosing successive elements of the other set.
- WARP longitudinal elements in a fabric or loom, interlaced by the weft.
- WARP-FACED where the warp count is higher than the weft, and the weft is concealed.
- WARPFLOAT any portion of warp element that extends over two or more weft threads.
- WEFT transverse element interlaced through the warp.
- WEFT-FACED weft count outnumbered warp count, warp is concealed by weft.
- UNCUNA (unkhuna) Que. carrying cloth.

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