



SHUTTLE CRAFT

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Table of Contents

- 1 M's and O's—EMPHASIS ON WEFT, by Harriet Tidball
5 **TAPESTRY THROUGH THE AGES**
 THE WEAVING OF TAPESTRIES, PART 1, by Trude Guernonprez
11 THREADING IS EASY, by Harriet Tidball
12 Preparing the Warp for Threading
15 Threading
17 Threading with an Assistant
18 **SHUTTLE CRAFTER DESIGN**
 CAR COATS, by Natalie White
22 **LOOM LANGUAGE**
23 **THE WEAVER'S BOOK SHELF**, by Boris Veren
 Review by Marie Maurelius
27 **THE LOOM-SIDE MARKET**
27 Recommended Sources
33 Directory of Services

(All articles not otherwise specified are by Harriet Tidball)

COVER PLATE:

"A Piece of Poncho, Tapestry-Woven with Llama Wool, Design of Animals and Insects, Pre-Inca Period." From the publication, *TEXTILES OF PRE-INCA, From the Burying Grounds in Peru*. The collection of Kanegafuchi Spinning Company. Publisher, Kyoto-Shoin, Japan.

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M's and O's

EMPHASIS ON WEFT

By Harriet Tidball

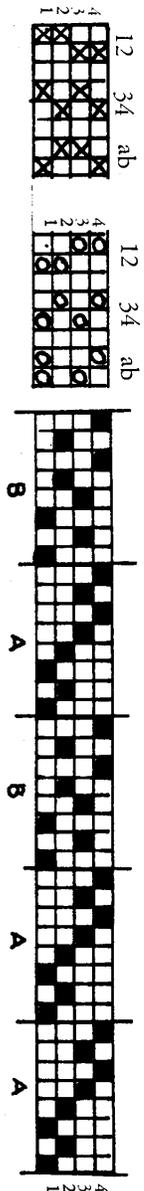
The fascinating stage of exploring any new weaving technique comes after the weaver has mastered the classical interpretations and starts sampling to discover what further potential the technique has. Sampling for new effects is more rewarding when done on a narrow warp than when done on a wide, planned project warp, because the weaver feels more freedom and does not hesitate to make full use of the trial-and-error system of discovery. As with any other exploratory activity, a "dip in here and there" method brings thin rewards, whereas rich experiences result from a systematic approach.

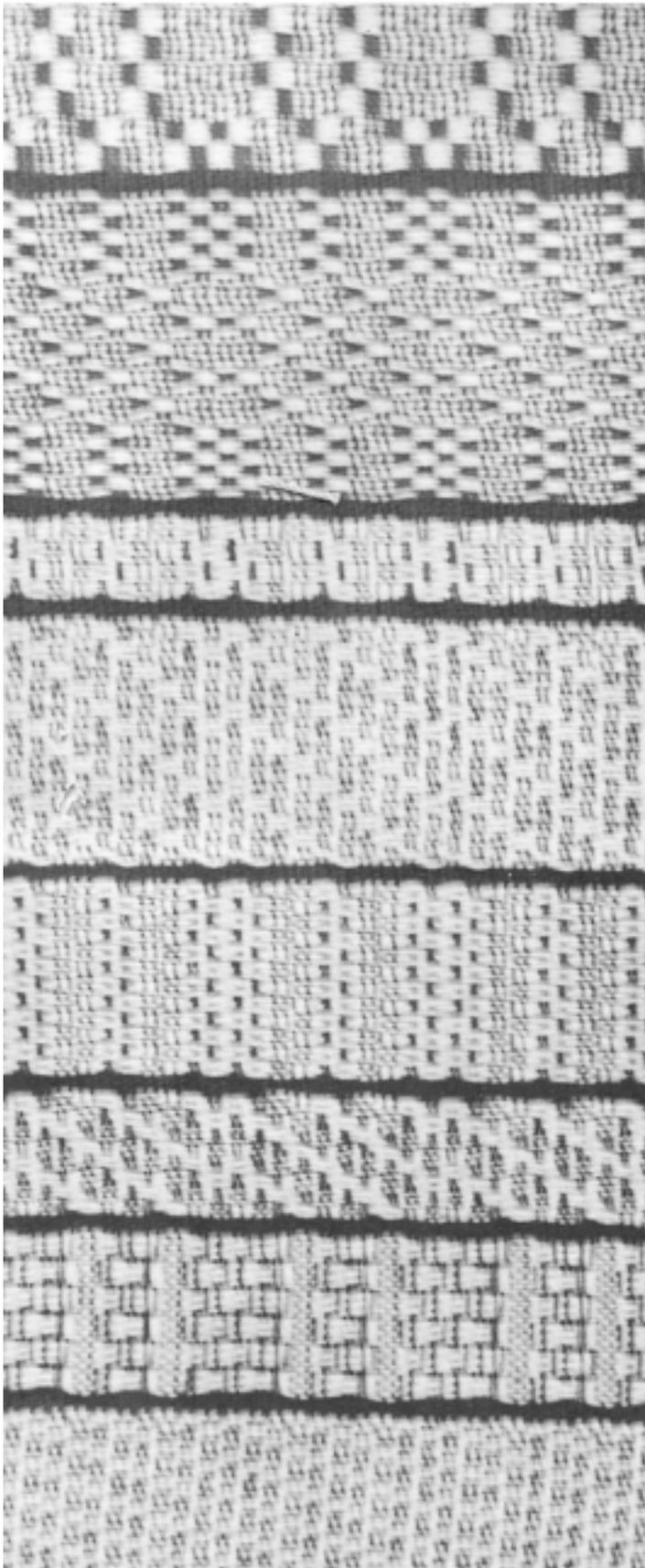
For best results the objective of any sampling project should be well in mind before the sampling is started. Each different trial should be made purposefully, and the line of thought should be carried from the simple to the complex. Below are listed the chief sampling objectives, in the order in which they are best considered.

- (1) Sampling for pattern variations. (Usually using the classical materials, warp set, and weaving methods.)
- (2) Sampling for interlacement-texture variations. (The warp may be like the above, or a variant, but a uniform weft should be used throughout.)
- (3) Sampling for thread-texture ranges. (Selecting, one at a time, the interesting textures discovered at step two and weaving them with various types of weft yarns and combinations.)
- (4) Sampling for color harmonies. (Further experiments developing from step three into which multiple colors are introduced, as suggested by the results of steps two and three.)
- (5) Combining the results of the four previous steps: (experiments in pattern, interlacement textures, thread textures, color effects) to develop a design suitable for a specific project.

The last step is the vital one, from which new textile designs are developed. There is a tendency among weavers to overlook the first four experimental stages and plunge directly into the fifth stage, guided only by the undisciplined imagination. Some excellent designs often result, one might say accidentally, but while the accidental approach may lead to two or three good designs, the systematic approach will lead to dozens. Step two, sampling for interlacement-textures, is the subject of this article.

Since this is a problem of varying the treadling or shedding sequences, the design emphasis falls on the weft, so the warp was planned to accent this. The





(1) Twill Sequence
Treadle: 1, 2, 3, 4,
repeat.

(2) Broken Twill Sequence
Treadle: 1, 3, 2, 4,
repeat.

(3) Three-Shed Point Twill
Treadle: 1, 2, 3, 2,
repeat.

(4) Three-Shed Point Twill
Treadle: 2, 3, 4, 3,
repeat.

(5) Four-Shed Point Twill
Treadle: 1, 2, 3, 4, 3, 2,
repeat.

(6) Alternate Sheds
Treadle: 1, 3, 1, 3, 1, 3;
2, 4, 2, 4, 2, 4;
repeat.

(7) Alternate Sheds
Treadle: 1, 4, 1, 4, 1;
3, 2, 3, 2, 3;
repeat.

(8) Pseudo-Tabby Sheds
Treadle: 5, 6,
repeat.

(9) Six-Shed Twill Sequence
Treadle: 1, 2, 3, 4, 5, 6,
repeat.

(10) Twill with Pseudo-Tabby

Treadle: 6, 1, 5, 2,
6, 3, 5, 4,
repeat.

(11) Huck Sequence

Treadle: 6, 1, 6, 1, 6;
5, 2, 5, 2, 5;
repeat.

(12) Three-Shot Sequence

Treadle: 1, 5, 1;
2, 5, 2;
3, 5, 3;
4, 5, 4;
repeat.

(13) Three-Shot Sequence

Treadle: 1, 6, 1;
2, 6, 2;
repeat.

(14) Paired Progression with
Pseudo-Tabby

Treadle: 6, 1, 5, 1;
6, 2, 5, 2;
6, 3, 5, 3;
6, 4, 5, 4;
repeat.

(15) Spot Weave Sequence

Treadle: 6, 1, 6, 1;
6, 2, 6, 2;
repeat.

(16) Summer and Winter,
Classical, pseudo-tabby
weft like warp.

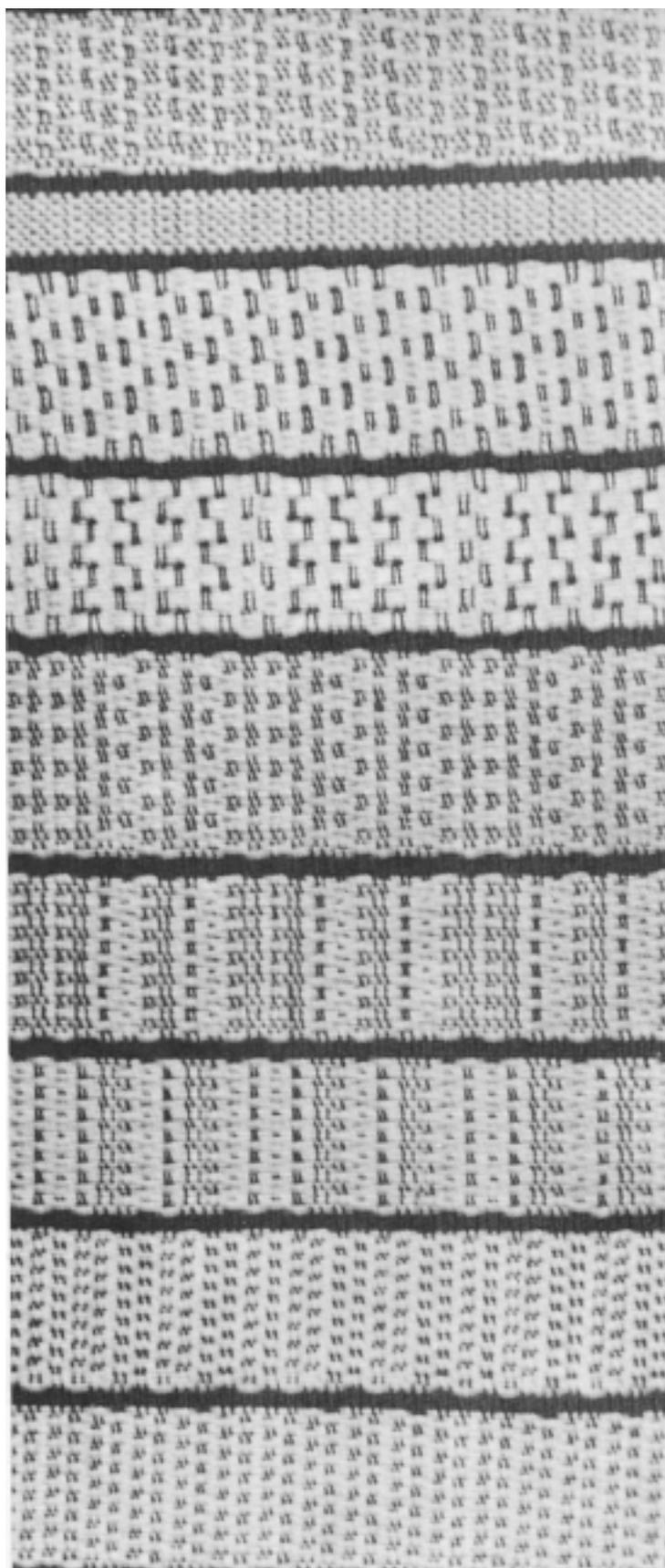
Treadle: Unit A—
6, 1, 5, 2, 6, 2, 5, 1.
Unit B—
6, 3, 5, 4, 6, 4, 5, 3.

Repeat units as desired for pat-
tern.

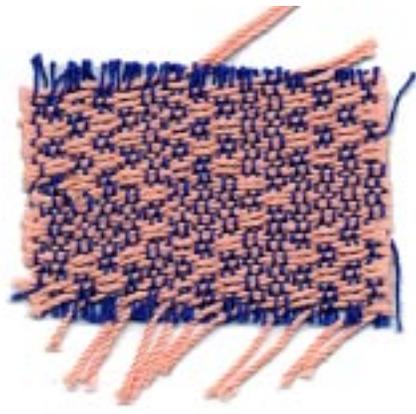
(17) Overshot Sequence,
pseudo-tabby weft like
warp.

Treadle:
3 A—6, 1, 5, 1, repeat;
B—6, 2, 5, 2, repeat;
C—6, 3, 5, 3, repeat;
D—6, 4, 5, 4, repeat.

Repeat sequences as desired for
pattern.



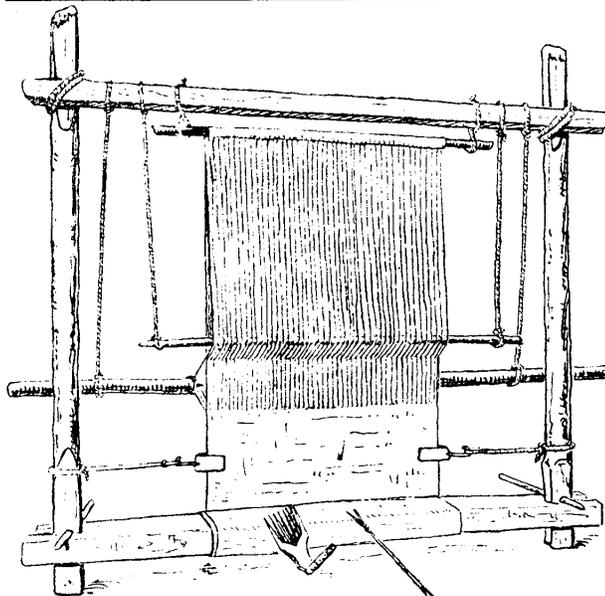
Sample on the next page.



warp used for the illustrations was 24/2 cotton (Lily Article 314) set at 30 ends per inch, a warp set which would be completely impractical for the classical *M's and O's* interpretations. (For classical *M's and O's*, the 24/2 cotton should be set at about forty ends per inch.) A heavier weft was selected, 10/3 mercerized cotton (Lily Article 714), and used in a single color throughout. Weft like the warp was used on the pseudo-tabby sheds to form the separations between different texture samples.

The draft used for the interlacement-texture experiments is given at the beginning of the article, along with the *M's and O's* tie-up. A simple pattern is best since pattern elaboration distracts from the texture emphasis. The tie-up used for all these experiments is the one shown: the four treadles at the left form the *M's and O's* sheds, and the two at the right give the pseudo-tabby sheds. Thus, only six of the possible fourteen four-harness tie-ups are used, the ones which give balanced sheds. A further set of texture experiments could be made by adding the four treadles which lift single harnesses, and the four which lift three harnesses, though in *M's and O's* this field of experimenting is not as richly rewarding as is the restricted use of balanced sheds.

Systematic sampling will reveal many new and unsuspected adaptations for textiles of different types. Each one of the texture experiments shown here suggests to the imaginative mind some extended application, through the use of different warp and weft materials, different color or colors, different warp set, different pattern arrangement.



From: *Studies in Primitive Looms*
by H. Ling Roth
Bankfield Museum, Halifax, England

FIG. 91B. VERTICAL WOMENS HANDGRIP LOOM. FROM FRANZ STUHLMANN'S AUSFLUG IN DEN AURES, HAMBURG, 1912 AFTER B. FATAH'S METHODE DIRECTE POUR L'ENSEIGNEMENT DE L'ARABE PARLE'. ALGER, 1904.

TAPESTRY THROUGH THE AGES

THE WEAVING OF TAPESTRIES

PART I

By Trude Guermonprez

It may seem superfluous to start with the statement that all weaving is an interlacing of vertical (warp) and horizontal (weft) elements. But I shall refer to this statement and the obligation it places on us at frequent intervals.

A woven piece—a fabric—will at all times express the character of its structural form: the perpendicular interlacing of weft into warp. The warp, being a series of threads spaced at regular intervals, kept under tension, dividing into alternately raised and lowered threads, permits the weft thread to pass in-between.

A tapestry—as we generally accept the meaning of the word—is a woven fabric. Its specific nature is that of a protective piece of weaving, covering the wall or a piece of furniture, or serving as a room divider, carrying with it a feeling of decoration, of embellishment, of emphasis for a particular spot.

At least that was the case at the end of the 14th century in France when *le tapisier*, the man who hung the rugs (French: tapis—rug) was an important member of the royal household, travelling frequently with the court to the fields of battle or in pursuit of political missions. It was his task to spread huge tapestries wherever the court decided to stay. Cold stone castles were made to look and feel more comfortable by hanging giant weavings on the walls. Bed-chambers and other rooms of privacy were created by using them as space dividers. On the battlefield, a barn was disguised with them, to look like royal quarters.

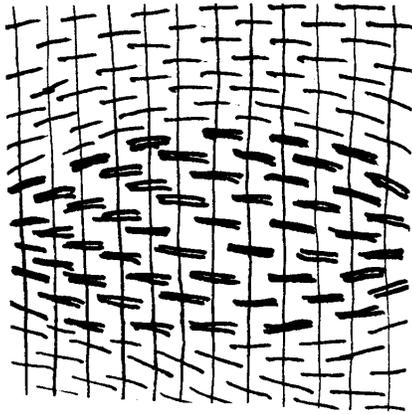
On the tapestries were depicted the stories of the bible, scenes of courtly life, heroic experiences from the lives of their owners. All this was designed by contemporary masters—often in miniature for the sake of book illustration—and then transposed into weaving by skillful artisans in the shops of the tapestry weavers. The production of these laborious pieces of weaving was carried out as an industry, serving the needs of the nobility. Qualified weavers were established in the ateliers (studios) under the guidance of a master craftsman.

In some studios, today as then, the looms have the warp stretched upright (*haute lisse*) and in others the horizontal warp is used (*basse lisse*). In both cases the warp is divided by a lease-rod into two sets of alternate threads—forming thus one open shed. The warp threads behind the lease rod are strung singly through half-heddles which can be pulled up in small groups by hand. Thus, by carrying the threads from behind the lease rod forward, the opposite shed is created. The warp material is usually cotton, the weft is wool. The den-



sity relationship of warp and weft is such that the wool, when woven in, covers the warp completely in a rep-like surface.

In order to reproduce the design or "cartoon" in tapestry technique, the outlines of the design are traced on the warp; the cartoon is placed where the weaver can see it. Several weavers start working at different places next to each other. With the weft threads wound on little *brochettes* (spools) the weaver shuttles back and forth, building up, always a receding area of color. The weft thread is beaten down with a comb. One area completed, the neighboring one is built up. Interlocking of weft threads is unnecessary, where curved or di-



agonal borderlines are indicated. A vertical borderline of color areas will become a slit in the fabric, which often is sewn together later, but can be interlocked during the weaving. The weaver works on the reverse side of the fabric. Small mirrors attached in back of the warp, make it possible to check the completed parts against the cartoon.

Thus a woven design grows by interlacing weft perpendicularly into warp. As the areas that are woven at one time are small, and the beating down by hand cannot be strictly horizontal, as with a mechanically guided beater, the weaver will find it possible to shape the rounded outlines somewhat with the comb, a freedom typical for tapestry weaving, and, when used successively, a lovely element of design.



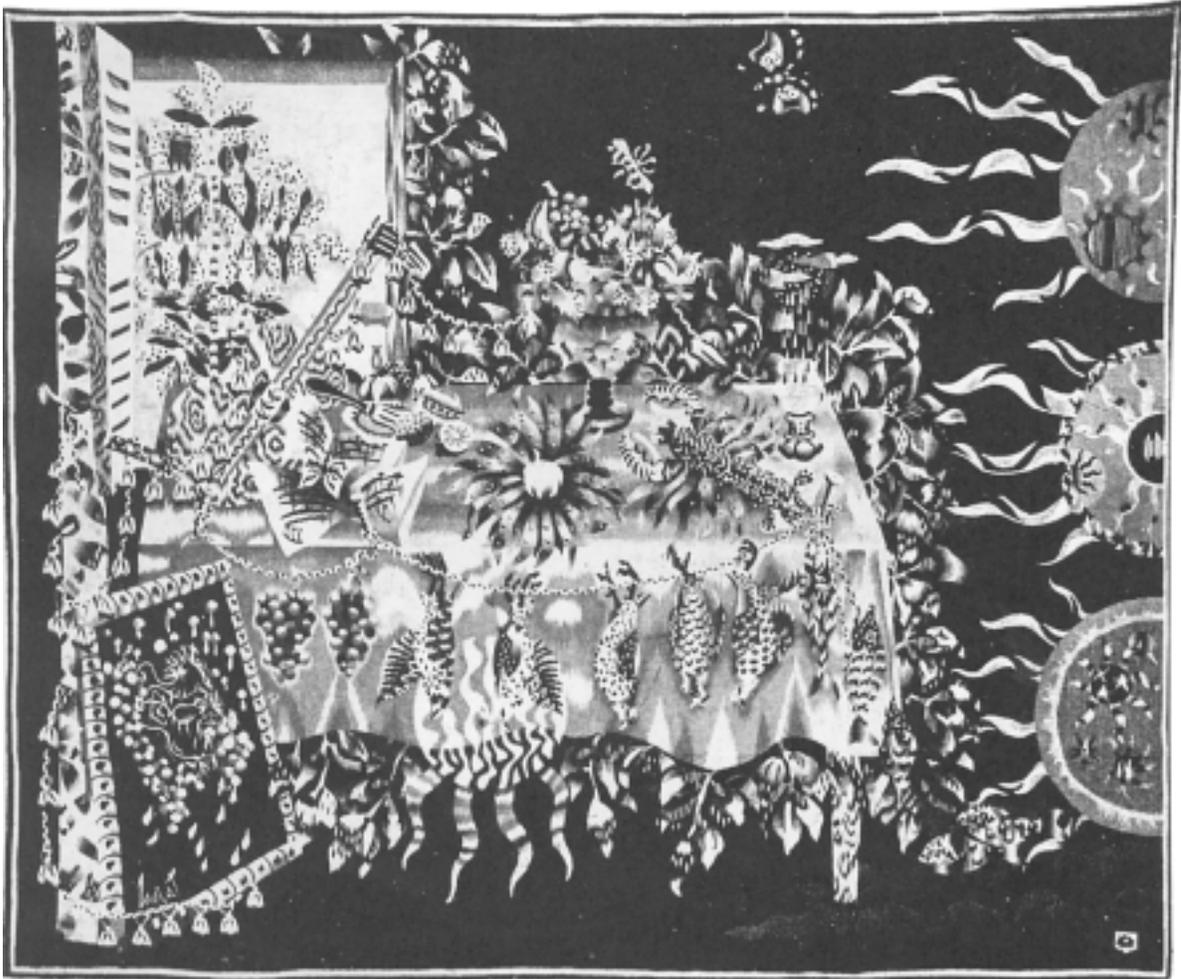
*Wool Tapestry. "Pasiphaë"
Coptic, 5th-6th Century.
New York, Brooklyn Museum.*



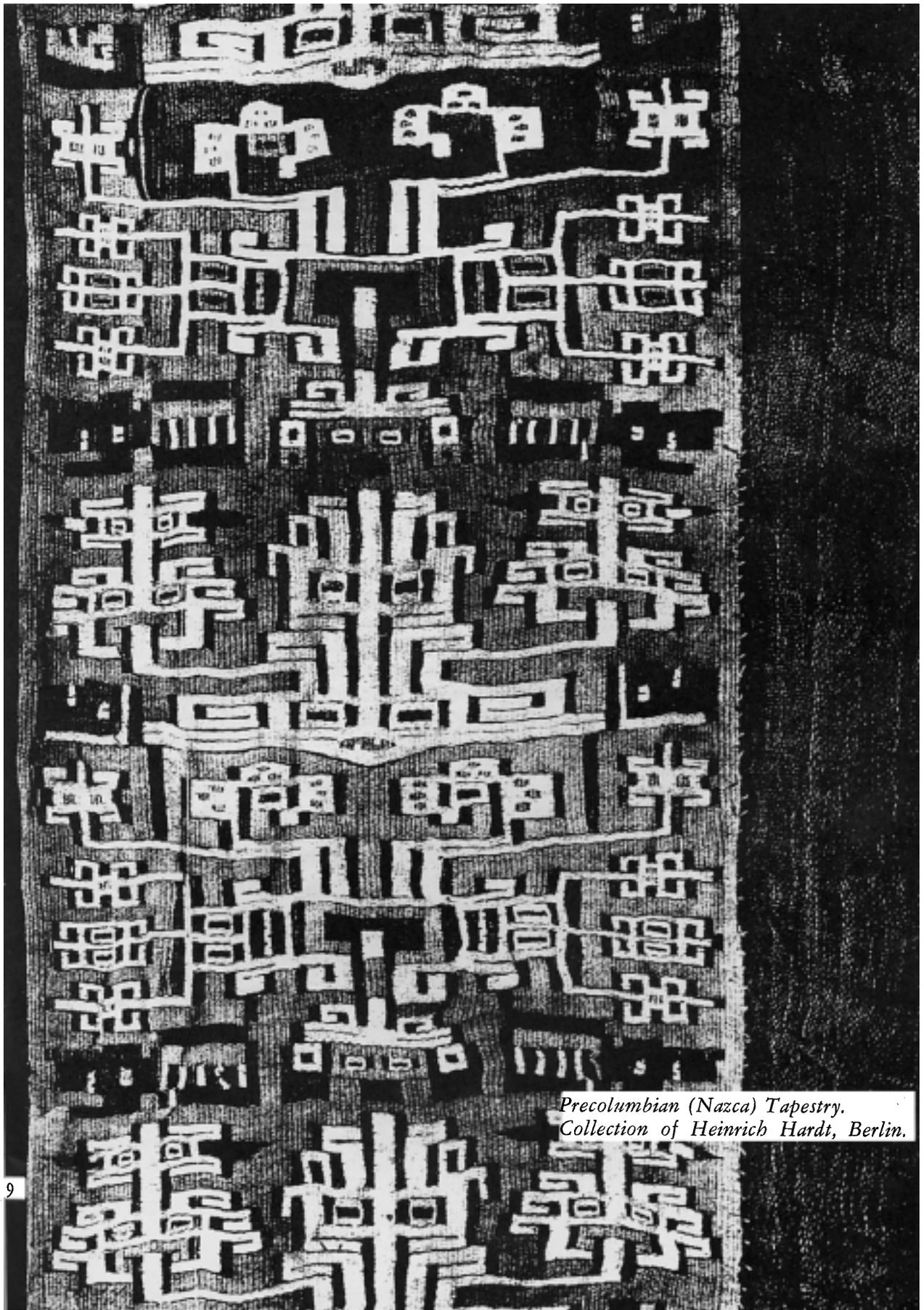
*Detail of "Bal
des Sauvages."*

It is clear that the individual expression of the craftsman and the material are both quite subordinated to the ultimate goal: the reproduction of a design—a painting—as faithfully as possible.

It is due to the coarseness of the material and set, and a very small range of vegetable-dyed colors, that the earliest tapestries show still a distinct charm of the handworked—the woven piece. In later centuries this feature disappears, as everything tended to aim at a more exact copy of the cartoon rather than at the interpretation of it. The range of color grew; the yarns and densities became finer, and great quantities of meaningless tapestries were the result. As the whole tapestry industry persisted in this unpersonal, commercial way until the present time, it took, significantly enough, the painter of the twentieth century to become aware of the incongruity in this field of the decorative arts. We must give to Jean Lurçat credit for this new understanding and for a revival of the French tapestry-making shops, though the tapestries remain a reproductive craft rather than a creative art.

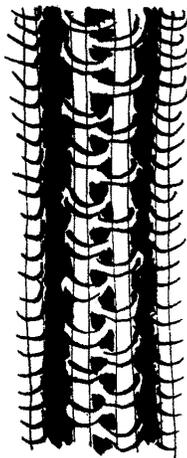


Jean Lurçat. "Le Soleil Sous la Table." 1943. Aubusson, Galerie Louis Carre.



*Precolumbian (Nazca) Tapestry.
Collection of Heinrich Hardt, Berlin.*

The same technique of weaving—for the sake of simplicity called tapestry weaving — took on quite another expression: the peoples who developed the art with the designer and the weaver one and the same person. In Precolumbian weaving we find the finest examples of design integrated with masterfully applied weaving skill. In Peru, before the time of the Spanish conquests, the product of the tapestry loom played a different role. Tapestry was not used for architectural purposes, but was worn as clothing, or wrapped around personal possessions. A great deal of the finest weaving was used for dressing the dead, and mummies have been found wrapped in layer after layer of cloths. The looms used were of the back-strap type, and every piece was woven wholly by one individual. The designs are symbols, created by ritual and tradition, but shaped through the technique the craftsman used. It was the rectangular interlacing of warp and weft which determined the forms.



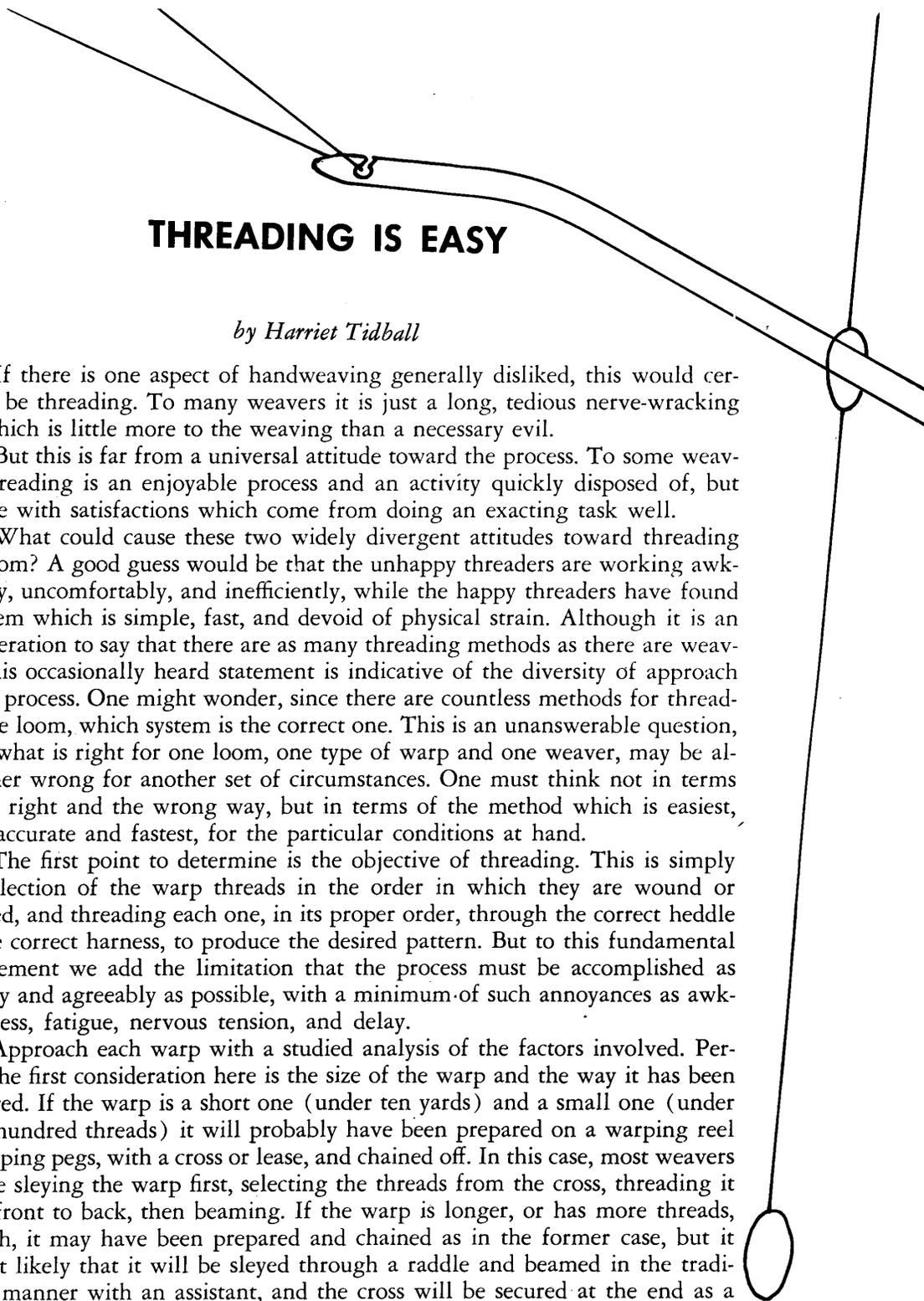
A striking example is the way in which the precolumbian weaver used the appearance of the "slit" in weaving. (The slit comes about when two color areas meet vertically.) At the slit between two color areas, two warp threads were singled out and a weft thread of a contrasting color wound around them as: O The slit was not closed, but emphasized. What first was a technical accident, became a striking feature of the total design.

The same mastery of the craft, and at the same time willful application of its peculiar structural features, can be found in Coptic weaving. Here the forms of the design were modified by the limitations of the craft, through the weaver manipulating his beating comb in such modelling ways that it is sometimes hard to find the right-angle interlacing of warp and weft.

In old Flemish, Polish and Scandinavian tapestries, wherever the designer and weaver were the same person, the tapestries carried a much stronger personal and textile expression. The technique of interlocked rectangles determined the design and often the dovetail-interlacing of the weft threads gave the forms of people and flowers their stylized character.

We contemporary weavers derive our expression from these designer-weaver peoples rather than from the French tapestry makers. In the next article, I shall point out how contemporary life and thinking have given us a new variety of possibilities for, "The Weaving of Tapestries."





THREADING IS EASY

by Harriet Tidball

If there is one aspect of handweaving generally disliked, this would certainly be threading. To many weavers it is just a long, tedious nerve-wracking job which is little more to the weaving than a necessary evil.

But this is far from a universal attitude toward the process. To some weavers threading is an enjoyable process and an activity quickly disposed of, but replete with satisfactions which come from doing an exacting task well.

What could cause these two widely divergent attitudes toward threading the loom? A good guess would be that the unhappy threaders are working awkwardly, uncomfortably, and inefficiently, while the happy threaders have found a system which is simple, fast, and devoid of physical strain. Although it is an exaggeration to say that there are as many threading methods as there are weavers, this occasionally heard statement is indicative of the diversity of approach to the process. One might wonder, since there are countless methods for threading the loom, which system is the correct one. This is an unanswerable question, since what is right for one loom, one type of warp and one weaver, may be altogether wrong for another set of circumstances. One must think not in terms of the right and the wrong way, but in terms of the method which is easiest, most accurate and fastest, for the particular conditions at hand.

The first point to determine is the objective of threading. This is simply the selection of the warp threads in the order in which they are wound or beamed, and threading each one, in its proper order, through the correct heddle on the correct harness, to produce the desired pattern. But to this fundamental requirement we add the limitation that the process must be accomplished as quickly and agreeably as possible, with a minimum of such annoyances as awkwardness, fatigue, nervous tension, and delay.

Approach each warp with a studied analysis of the factors involved. Perhaps the first consideration here is the size of the warp and the way it has been prepared. If the warp is a short one (under ten yards) and a small one (under eight hundred threads) it will probably have been prepared on a warping reel or warping pegs, with a cross or lease, and chained off. In this case, most weavers will be slewing the warp first, selecting the threads from the cross, threading it from front to back, then beaming. If the warp is longer, or has more threads, or both, it may have been prepared and chained as in the former case, but it is most likely that it will be slewed through a raddle and beamed in the traditional manner with an assistant, and the cross will be secured at the end as a guide to threading order. If the warp is more than fifteen yards long, and most

especially if the weaver does not have an assistant to help with beaming, it is probable that it will have been beamed sectionally. As things actually work out these days, it is quite likely that the warp will have been sectionally beamed, even if it is a short, small one. Loom manufacturers are more and more supplying sectional instead of plain beams, and sectional warping has really "caught on" since weavers have learned that by this method a practically fool-proof warp may be beamed quickly and without assistance. These three main beaming methods present different threading problems.

Further considerations in the selection of threading method are the type of equipment, the type of warp, and any individual characteristics or preferences of the threader which may influence the threading method. Adaptation to the warp type is largely a matter of judgment which comes with experience, and individual convenience is a matter which the weaver works out in time, so a generalized method will be presented here which does not make concessions to these peculiarities. The specific problem will be the threading of the sectionally beamed warp, a threading problem which seems to be more baffling than any other, probably because such a warp has no cross or lease to hold the order of threads.

PREPARING THE LOOM FOR THREADING. The first step toward efficient threading is the dismantling of the front of the loom so that the space in front of the harnesses is clear. The means of doing this differs from loom to loom. In rigid looms, the breast beam usually lifts out, and the beater is commonly slung on floor-level brackets so it simply lifts out too. The cloth beam may likewise lift out, but if it is fastened permanently into the loom there is little loss as its removal is not as important as the removal of the breast beam and beater. Some beaters, unfortunately, cannot be removed, so one must get along by simply taking off the top and the reed. Folding looms present different dismantling problems. The first photograph shows a Macomber loom in threading position. The side arms are lifted from their brackets and the entire breast beam assembly lowered to the floor. The beater is lowered on top of it, or it may be lifted out, and the cloth beam may be lifted out. The lower photograph shows the folding Gilmore loom in threading position. Most X-frame folding looms are handled in this same manner: folded instead of dismantled. Loosen the wing nuts at both sides; stand in front of the loom and step on the horizontal cross piece to which the treadles are attached. Lift the breast beam up until it is at maximum height, or the completely folded position. The beater will then slide under the breast beam and can be rested on the floor. Sometimes the harnesses are too low for comfortable threading, and it is an advantage to raise them. If the loom has overhead jacks, lift the harnesses and slip strong dowels or pieces of board under the jacks to hold them up. If the loom has push-up harnesses, raise the harnesses and slip two short boards of suitable width under them. One must study one's own loom to determine how it is dismantled. In some looms it is necessary to remove bolts, which is troublesome but feasible, but screws should never be removed.

A further adjustment which is sometimes advisable is the raising or moving forward of the back beam. The back beam should be somewhat higher



A dismantled Macomber loom being threaded by Helen Bontecou, National City, Calif



A folded Gilmore loom being threaded by Mrs Martha Ebener, Portland, Oregon

than the heddle eyes, so the warp slopes down to them. And, there is often greater security and speed in threading if the beam is fairly close to the harnesses. This matter must be left to the ingenuity of the weaver in adapting the equipment to the process, and it is best to start with the back beam in normal position and then see if an altered position is required.

THE THREADING POSITION. The threader sits directly in front of the harnesses and as close to them as possible. It is important that the seat be of the correct height, but here again "correct" varies with the convenience of the individual. My own preference is for a twelve inch high stool, which places the heddle eyes at about chin height. The two photographs show a higher position, which some threaders prefer. Give several stools and chairs a good trial before selecting a favorite.

ARRANGING THE WARP FOR THREADING. The best handling of the warp requires practiced skill and the beginner cannot hope to work with the smooth, easy speed of the experienced threader. The beginner must take intermediate safeguards which slow the work, but as experience grows and the "feel" of the process develops, some steps can be discarded. Full details, without short-cuts are given here. Follow these directions at the outset, and shorten or eliminate steps only as short-cuts develop naturally.

Unwind a bout at one end of the beam by loosening the end, carrying it around the back beam, and then drawing it straight forward as the beam unwinds until the ends are eight or ten inches beyond the eyes of the front harness heddles.

Fix the warp beam in this position with the ratchet or brake.

Hold the ribbon of warp under tension throughout, as a release of tension, even the tiniest bit, will disturb the thread order. The ribbon of warp will be lying on the back beam, tensioned, with every thread in the exact position that it is wound on the beam.

With a piece of Scotch tape about three inches long, cement this warp ribbon to the back beam, pressing the tape firmly to the threads and the wood. Wide Scotch tape is safest. Masking tape can be used, but Scotch tape is safer because through it one can see any threads which become displaced.

Drop the warp ribbon. The threads may twist together when tension is released, especially if the warp is cotton, but this is of no moment at this stage.

Loosen the end of the second bout, and very carefully carry the end around the beam so it will extend the same distance as the first. As much as possible, keep the ribbon tensioned so that there will be no disturbance of thread order when it is carried over the back beam. It is not always possible to keep the exact thread order while unwinding, but order can be restored by using a fine-toothed comb. Insert the comb between the warp beam and the ribbon and carry it upward, around the back beam, while holding the free end of the ribbon under tension.

Scotch tape this warp ribbon to the back beam the same as previously. No harm is done if the tape overlaps bouts.

Continue thus until all of the warp is hanging firmly taped, over the back beam.

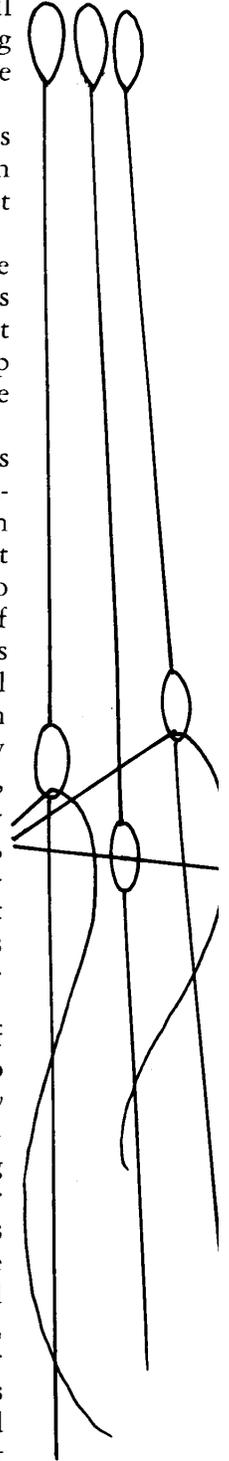
It is a wise precaution to then stretch a long piece of Scotch tape the full length of the warp, at the inside edge of the back beam. A little careful combing may be required, just along the beam, while this strip is being laid, to eliminate minor twists.

A short-cut used by some experienced weavers is laying all the warp bouts across the back beam at one time, then unwinding the warp to the correct length and taping it all at one time. The pitfalls of this method will be obvious, and it should not be attempted until the threader feels very sure of his controls.

Some weavers prefer to carry the bouts over the harnesses and tape the ends to the top front of the first harness or to a cross-piece if the loom happens to have one. This system increases the hazards of thread disorder and makes it difficult to retain full tension on all warp ribbons. And the threading from warp held in this position requires many extra motions, doubling or tripling the amount of time required for threading.

THREADING. All handloom threading is done from right to left, unless the threader is left-handed, in which case he reverses the direction. If one wonders why the right to left direction is used, just try entering a few threads from the opposite direction; it is as awkward as writing with the left hand. The first step is to loosen the catches holding the heddle bars, and to push all heddles to the left-hand side of the loom. The wise weaver will calculate the number of heddles required on each harness for the entire threading, and add or remove as required, but always leaving a few extras. If the warp width is to be the full harness width, not more than half a dozen extra heddles should be left on each harness, but if the warp is narrower than the frames, as many extra heddles may be left on the harnesses as there is space for. This applies to a jack-type loom, since a counter-balanced loom is sometimes thrown out of balance if the harnesses contain extra heddles. My own system is to simply be sure, by estimate, that there are sufficient heddles on each harness. When the threading and slewing are completed, if there are too many empty heddles remaining at the left side, distorting the warp direction, removal is necessary. With some looms it is difficult to add or remove heddles after the threading is started, so this matter should be checked in advance.

The next step is to analyze the draft to determine a logical number of threads to work with in a single threading group. Most drafts divide well into rhythmic groups, so this is not difficult. The long *Overshot* drafts, and *Shadow Weave* drafts are the only ones which are difficult and require special concentration. The wise threader has his draft thoroughly in mind before starting threading, so that he need not follow it thread by thread, and in most cases, after one or two repeats, need never refer to it again. This is accomplished by analysis of the technique units or rhythms, more than by memorizing. As an example we shall use the warp threaded for the *M's and O's* weft variations. The total draft is five eight-thread units of forty ends. These units are arranged in A, A, B, A, B order. Each eight-thread unit requires two heddles on each of the four harnesses, so the full draft requires ten heddles on each harness. This draft is easy to thread in its entirety as one warp group, through memorizing the thread order in the A and B units and the occurrence order of these units. If the draft



is a long one, the weaver may wish to break it down into two or more threading groups. Threading groups may vary from twenty to fifty or sixty ends, but they should be so logically selected that the threader need never refer to the draft during the process of threading one group.

Another approach is to use one warp bout as the threading group. This was the system used for the example warp. Since each warp bout contained sixty ends, this required seven and a half draft units for each bout: for the odd numbered bouts fourteen heddles from each harness plus two extras on harnesses one and three, and for the even numbered bouts fourteen heddles from each harness plus two extras from harnesses two and four. Easy enough; and most drafts can be figured in this manner.

Count off the number of heddles from each harness required for the pre-determined threading group, and push these heddles to the right hand sides of the harnesses.

Starting at the right, count off the number of warp ends required for the threading group. The value of threading an entire bout as one warp-group is obvious, since this eliminates the necessity of counting threads. (As experience grows, the thread-counting step may be eliminated, however, since this is merely a precaution against threading errors.) With the left hand just to the left of the group of selected heddles, grasp the ribbon of warp between the thumb and three fingers, leaving the index finger free. Tension and straighten the warp ribbon so that any twists or tangles are removed and all threads are held in the positions in which they emerge from the tape. A fine-toothed comb, used gently, will often help here. Hold the warp ribbon under tension with the hand just in front of the harnesses. Some people find it easier to rest the hand on the heddle bars.

With a drawing-in hook, push the first heddle from the first drafted harness slightly to the right of the heddle group. This is most easily done at the lower heddle bar.

Run the hook through the heddle eye and to the warp ribbon, and pick off the first thread of the warp ribbon with it. This is the tricky process, and the index finger of the left hand is kept free to help select the correct thread. The eye should check at the back-beam tape line to be sure that there are no twists and the proper thread is selected. The secret here is to hold the warp ribbon continuously under tension so that the thread order cannot be disturbed.

Draw the thread through the heddle eye and, while withdrawing the hook, push the threaded heddle to the side.

Repeat these steps with the second heddle, the third, and so on, until all the threads and heddles of the warp group are used.

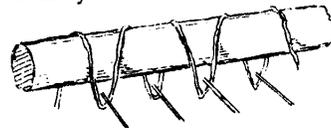
If the last thread goes into the last heddle, it is probable that no errors have been made, but it is usually wise to check the threading at this point. Satisfied that the threading is correct, tie the dangling warp ends in a loom knot and push the threaded heddles to the right-hand side of the harnesses.

Repeat these steps of counting off heddles, counting off threads, drawing the threads through the heddles, checking for accuracy, tying with a loom knot and pushing heddles to the right, until the entire warp is threaded.

The person using this method for the first time should be working with fairly coarse warp, and should divide the threading rhythm into small groups of perhaps ten to twenty ends. The system will seem awkward at first, as does any new activity, and it will be slow. But after sufficient practice anyone can develop great skill and easily thread four to five hundred ends per hour, and many people can do better than that. The process might be compared to using the typewriter. Disorganized threading systems are somewhat like the hunt-and-peck typing system with which few people can gain speed or accuracy. Learning the touch system requires concentrated effort and practice. But once the touch system is learned, speed and accuracy are quickly acquired, and the process is automatic so that the mind is freed from any concern about mechanics.

THREADING WITH AN ASSISTANT. Of all the loom dressing stages, it is in the threading that one can use an assistant most safely and advantageously. Calling in one of the neighbors or one of the members of the family to help with warp beaming may lead to disaster, but not so with threading. A threading assistant should sit on a high stool at the back of the loom, hold the warp bout under tension, pick off the correct thread, and loop it onto the drawing-in hook. Taping the bouts is unnecessary. The threader will make the best speed if he encircles the group of heddles at the lower heddle bar, loosely with the left hand, holding the heddles diagonally to the left. With the eyes on the heddle-bars, the correct heddle is selected with the left thumb and allowed to drop free. The hook is run through the eye, and the thread is drawn through after the assistant has looped the warp over the hook. This will go very rapidly if the threader does not pause to push individual heddles to the right. Push them as far as possible with the motion of withdrawing the hook. When a group needs to be pushed over, simply touch the hook to the top heddle bars at the left of the heddles and gently shove to the right. (One of threading's most annoying aspects is heddles which catch on a diagonal between the upper and lower heddle bars. This is usually caused by forcing, and heddle sticking is eliminated if the heddle is touched gently with the drawing-in hook, at one point only, either top or bottom as the case may be.) Two people working together in this manner can thread a loom with astonishing rapidity, but it is a strictly concentration, no conversation job. Don't try to keep at the job too long. An hour, or even a half-hour, and then a "coffee break," is advisable. Six hundred threads per hour is very moderate speed, which can be increased as two people work systematically together. One pair of weavers who always work together on this process has told me that they can thread a one-thousand-end warp in less than an hour, a speed which seems incredible to me. So, if two weavers are of a cooperative nature, here is the point for cooperation. And since the thread-picking is actually a non-skilled job, any member of the family who has reasonable patience and tenacity can do it as well .

HEDDLE ROD
IGOROT. BRIT. MUS.



SHUTTLE CRAFTER DESIGN

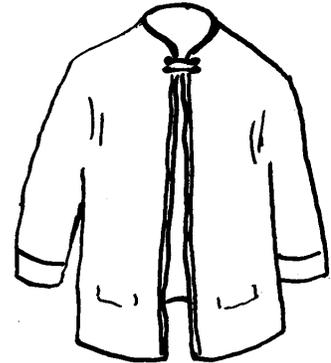
CAR COATS

By Natalie White

After completing a tweed suit yardage, a few yards of tweed warp were left on the loom, but not enough for another suit, a coat, or even a sport jacket with set in sleeves. A short jacket with kimono sleeves seemed to suggest itself. "Vogue" pattern No. 8186 or "Simplicity" pattern No. 1451 (they are practically the same) using two and a third yards of twenty-eight inch wide material, met the requirements.



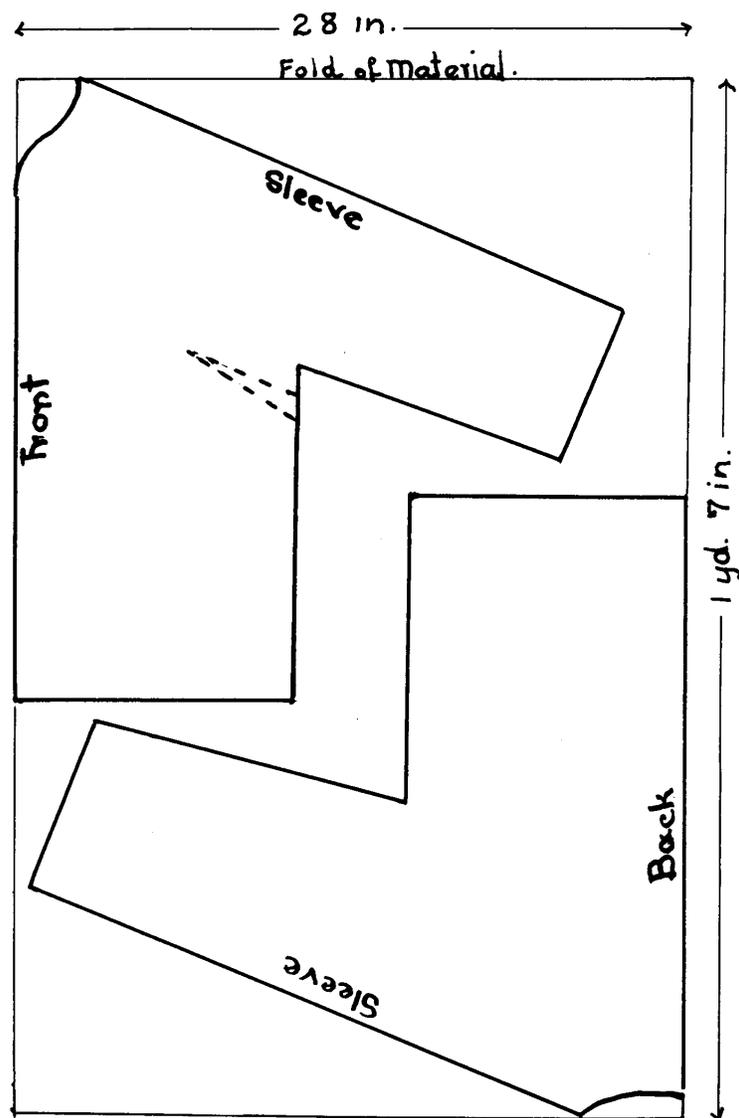
*Car Coat woven, designed and worn by
Natalie White, Pacific Palisades, Calif*



The material was woven and made up, and the simple jacket became one of the most useful wraps imaginable. It is worn casually with sport skirts or with sport dresses when a light wrap is needed, and, carried in the car, it is easily slipped on if the day turns cool.

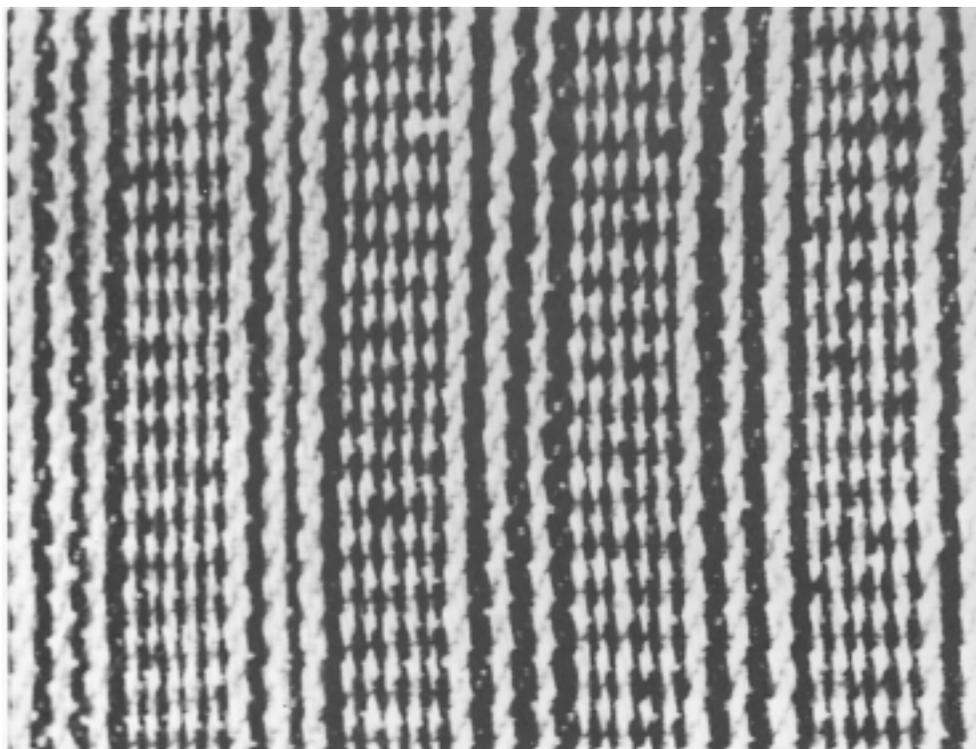
The jacket was such a success that material was woven for eight "Christmas gift" jackets, a pattern included with each length. To give variety to the eight jacket lengths all woven on the same warp, the loom was set up to an eight-harness straight twill, with warp of a medium weight tweed, a medium-light value of grey-green in color. (The Handeaving Yarn Company tweed is the correct weight for this, or the Lily Homespun Suiting Yarn.) The tie-ups and

weft color were varied in the different coats (see Shuttle Craft Bulletin for April 1955, included in the MONOGRAPH series) to suit the coloring and personality of the person who was to receive the material. For example, a lovely, rich red was used in a broad diagonal twill for a blond who enjoys wearing red but is at the same time rather conservative. For an outdoor type red-head, a dark green was used with a tie-up which gave the effect of a rough texture. Some of the jackets, when made up, had collars, some had round necks. One was made with revers and one was bound with strips of tweed woven in a harmonizing color.



For some time I have had one such failure on hand, too pleasant to be thrown out, but too soft in texture for tailoring—and what weaver doesn't have such a length tucked away in a drawer or box. I offer here this particular failure as a fabric which would make an excellent Car Coat, and perhaps stimulate other weavers to bring that misjudged yardage to light and see if it could not be used in the same way.

The fabric shown here is of a homespun type tweed yarn, planned for a sport coat and warped for a Glen Plaid in the following draft. The two colors were natural white and a rich, red brown. Yes, the yarn was a bargain. It proved to be too loosely spun of very short-fibered, soft merino wool which does not make the best tweed in any case. The warp on the loom was so delicate that when adequately tensioned for shedding, even a passing breeze would seem to snap warp ends. And it was so sticky that separating the 2-2 twill sheds was almost impossible. A little experimenting showed that these problems were solved when harnesses were raised singly, to make one-up-three-down sheds, but that a sleazy, impractical, unattractive fabric resulted. So we re-sleyed the warp from 24 ends per inch to 30 ends per inch to give greater warp emphasis. The weaving was then done with a double strand of all white weft with single harnesses raised in the order: 1, 2, 3, 4, repeated. The fabric was beaten to about fifteen shots per inch. This arrangement made the weaving possible, and a handsome fabric with a strong warp emphasis on one side, weft emphasis on the other, resulted. But the material was altogether incorrect—downright impossible—for its intended use, so it has remained out of sight for several years. Now it comes to light, and with a real added interest. This happens often to projects which we label as failures at the time of completion. I hope your luck is as good.

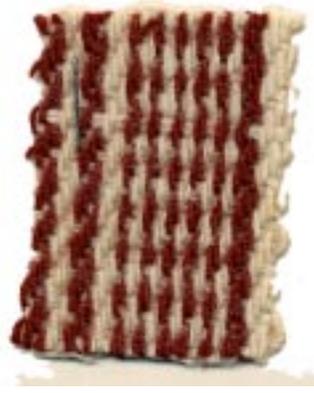


Now, here is a planned suggestion for this fabric. It makes an excellent car robe or afghan if planned for that purpose. I suggest a forty inch wide warp, beamed half and half in two colors. Arrange the two colors in the threading to make stripes down either side, and thread the Glen Plaid arrangement in the center. Or for a wider blanket, place the border stripes at one side and weave two lengths. The center joining is almost invisible—concealed in the warp stripes. Weave as above, Although this might be used as a project for “rescuing” some dubious yarn, it could advantageously be planned and woven of good yarn. The 3-1 twill gives a soft fabric which has a pleasant wrap-around quality.



LOOM LANGUAGE

- cartoon*—A full-scale, detail drawing which serves as the design guide for weaving a tapestry.
- lease*—The cross, formed by alternating up and down threads, which holds the thread order in a warp. Do not confuse with *leash*, which is an obsolete term for *heddle*, used now to designate half-heddles.
- Lease rod*—A stick placed on one side of a cross, or under alternate threads of a warp, to help hold the thread order or to make a one-up-one-down warp division.
- raddle*—A reed-like frame with a removable top, usually having two or four dents or divisions per inch, used for distributing the threads of a chained warp which is to be beamed directly.
- bout*—A group of warp threads, commonly the number of ends in two inches of warp, which are beamed simultaneously from the same number of spools onto one section of a sectional warp beam. If the sectional beam has one inch divisions, the bout will contain the number of ends required for one inch of warp.



The WEAVER'S BOOK SHELF

by Boris Ueren

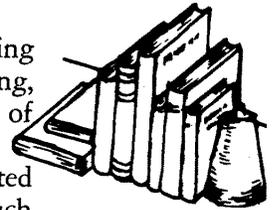
A confession: this writer thinks that the highest achievements in weaving were done by the ancient Peruvians! It's a highly personal and maniacal feeling, and I think I should preface this book-review by at least letting you know of my prejudice.

So as to avoid too much hyperbole and literary fire-works, I have invited as a guest reviewer one who certainly loves these Peruvian weavings as much as I do, but one who has more sober judgment, and more knowledge of Peruvian textiles: Marie Murelius.

Marie Murelius is a graduate of the University of California in Art and Anthropology. She has exhibited widely in painting and weaving and has won a number of awards in both, and has been greatly interested in pre-historic textiles. She did research work for a Master's degree at the University of California in Peruvian textiles. This consisted of analysis and reconstruction on the loom of a number of weaves. She has taught painting and design, textile design, and weaving at Lux College, Dominican College and Black Mountain College. (We hope some day to present in the pages of "Shuttle Craft" photographs of some of her gauze weaves which resulted from her analysis and study of Peruvian weavings . . . The book I have asked Marie Murelius to review is a collection of Color Plates published by Kyoto-Shoin, of Kyoto, Japan, (who gave us that portfolio of "Forty Handwoven Cotton Textiles From Japan") called: TEXTILES OF PRE-INCA.

"Weavers, textile designers, textile curators, teachers and generally enlightened laymen will hail with unqualified joy a recent publishing event in the weaving world. A group of portfolios, "Textiles of Pre-Inca" (Kyoto-Shoin, Kyoto, Japan) has just appeared, which contains a selection from the private collection of over 300 Peruvian textiles belonging to the Kanegafuchi Spinning Company.

Although Pre-Columbian textiles have been long considered by specialists in the field as the most outstanding examples of the weaver's art, there is to date an astonishingly small literature dealing with this extensive and extremely varied field. What little exists is either of an archeological or anthropological nature; informative, though technical, it should by no means be overlooked by the weaver-designer. No work has as yet appeared presenting Pre-Columbian weaving simply for the qualities which one always associates with these great textiles, namely, the superb craftsmanship, the rich color-sense, and the inexhaustible inventiveness of the designs. Probably no words could communicate the essential quality of a Pre-Columbian textile as no words can communicate the essence of a painting; they must be seen. But, unfortunately, Pre-Columbian textiles are scattered in museums and private collections all over the world, and only a few of us are fortunate in living close to a center where a small



number of examples may be seen. The other alternative is color reproduction. This new publication furnishes us the opportunity not only to see over a hundred examples of Pre-Columbian textiles, but also to see them as they (or any textile for that matter) have never been reproduced before. The Japanese are by now well known as distinguished book-makers. And so, to say that "Textiles of Pre-Inca" rates among their very best is to say a great deal. What distinguishes this publication is the incredible photography used in reproducing the textiles. The exceptional clarity of detail, the three-dimensional quality of the threads, and the unusual fidelity to the original color make these plates the finest of their kind. Not only are they a delight to the eye, but they offer the weaver-designer an unprecedented opportunity to study the excellent color-sense and the skillful designs for which the Pre-Columbian weaver has won such universal acclaim.

Another important physical aspect of this publication, not to be minimized, is the felicitous choice of the separate plate as against the bound volume. This is a tremendous advantage. Plates can be hung on the wall for study; for classes, for study groups, for private studios this is of inestimable help. But the best reason of all is that they can be hung for their pure aesthetic values.

The generous size of the plates, 14½x18", and the quality of the paper are a delight; the attractive design of the portfolios which house the plates completes one of the handsomest and most important publications for the textile-interested person.

Two shortcomings mar this otherwise beautiful publication. While the collection of the textiles is of excellent quality always, the examples are almost exclusively tapestry, double weave and embroidery. Since the Pre-Columbian weaver developed, and excelled in, every known weaving technique, the work would have had even greater significance and value had its scope been wider. One longs, for example, to see some of the exquisite Peruvian gauze weaves in the clean, sharp detail of these reproductions. Another criticism is the fact that the hundred textiles reproduced have evidently never been catalogued by a Peruvian-textile specialist. Many of the plates are misnamed as to technique, which the weaver will readily recognize. More serious, however, is the inclusion of a small number of textiles which are definitely not Pre-Columbian. Some may be post-Inca showing the influence of the Spanish conquistador on the Inca culture, and for this reason their inclusion is of utmost interest to the weaver-designer. The above points, however, in the face of the real contribution of this beautiful and long overdue publication are perhaps trifling, or at any rate far outweighed by all the other qualities so rare in modern textile books and portfolios. Once she has seen it, no weaver will be able to resist obtaining this rich mine of the weaver's art.

"Textiles of Pre-Inca" is published in ten portfolios of ten plates each for \$90.00. Considering the number of plates, the care taken in reproducing the original color, the unusual clarity of detail, the generous size and the handsome portfolios, the price for this publication is truly extremely reasonable. Let us hope these exciting portfolios will prove an inspiration and an incentive to other weaving books to come." *By Marie Murelius*

From WEAVER to WEAVER

My dear Handweaver:

The article by Miss Natalie White is the first of our series under the heading: Shuttle Crafter Design. We hope to present many articles (probably alternate months) by Shuttle Craft subscribers, whom we believe are the best weavers, turning out the most imaginative and best designed and executed textiles in the U.S. (The large proportion of Shuttle Craft Guild members in every Exhibit award list bears this out.) Anyone may submit an article typewritten, double spaced, accompanied by the required drafts, diagrams, photographs, and a sample of the fabric. For every such article we can publish, we shall award the contributor with a year's renewal to the Portfolio edition of SC.

The biographical sketch on Trude Guermontz will accompany Part II of her tapstry article, which will be on her own tapstry weaving, probably in the June issue. Trude and her husband are leaving soon for several months in Europe where they will visit tapstry centers and tapstry weavers. We hope this experience will create a Part III.

Good weaving to you,
Harriet Webb

The feature article in the current American Fabrics (No 39, Winter 1957) is on pre-Inca art, introduced with the statement, "Many designers today are becoming bored with the unadorned line. To them, to all modernists sated with the cult of simplicity, we present the intricate, explosively colored textiles of the pre-Inca era." The article was inspired by the same portfolio reviewed in Mr Vreue's Book Shelf, and from which our cover was graciously contributed. There are color reproductions of four of the pre-Inca tapetries and several in black and white. For \$1.00 one may secure from American Fabrics, 551 Fifth Ave., New York 17, a reprint: "Portfolio of Pre-Inca Art."

"Practical Weaving Suggestions" Vol 2-57 from Lily Mills Co, Shelby N.C. (\$1.00 per year subscription) brings an excellent article by Rupert Peters on the Crackle Weave. The analysis included will help me understand the drafts in the Olson book reviewed by Mr Vreue last month.

Kelseyville, Calif
April, 1957

Good weaving to you.
Sincerely yours,
Harris Tidball

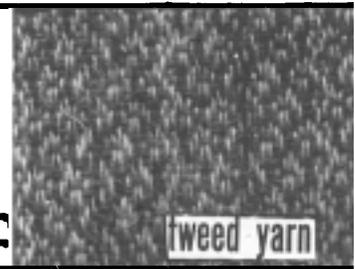
The LOOM-SIDE MARKET

Recommended Sources

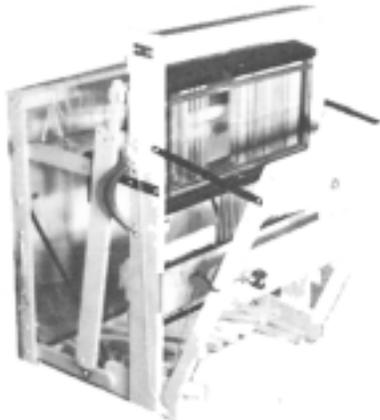
All of the items and sources included in these advertising pages have been tested by the Shuttle Craft Guild and found completely satisfactory. To help the prospective purchaser better evaluate any single item with relation to his own needs, most of the advertising notes have been written by the Shuttle Craft Guild rather than by the manufacturer or dealer. Questions about anything listed are invited, if further help is needed in making appropriate selections, and should be directed to the Shuttle Craft Guild Editorial Office.

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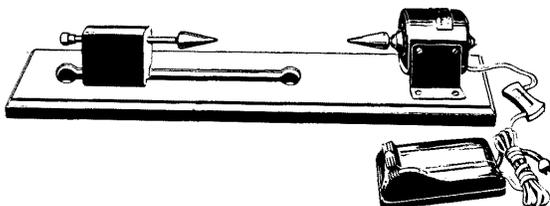
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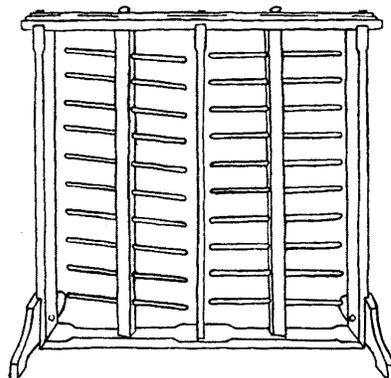
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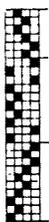


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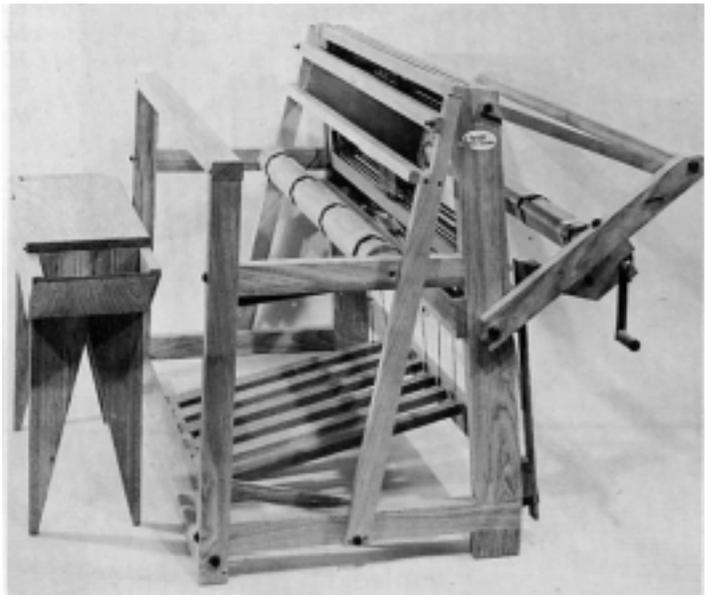
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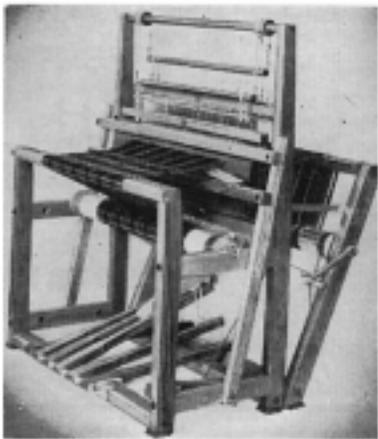
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LILY MILLS is truly the handweaver's "Horn of Plenty" when it comes to yarns. The standard source for cottons because of the many sizes and the wide range of color in each size: mercerized perle in 5 sizes, 70 colors each; 2, 3 and 4-ply warps in many sizes and colors, carpet warp, fine rug roving, 3 sizes of chenille, 8/2 drapery cotton (a new item), fine and heavy novelties, the ever-useful 10/3 mercerized Soft-Twist, and numerous others. In addition, a splendid 2/16 French-spun worsted in 40 colors, sports yarn and knitting worsted, and a homespun-type woolen tweed yarn in 3 sizes (another new item); linens in 20/2, 40/2, 10/1, 14/1, 20/1, in 20 colors; gold, silver and copper metallics; and other yarns. Color fast guarantee in all yarns. Of utmost importance to the handweaver, all of these hundreds of items are permanently in stock.

LILY MILLS has a special Handweaving Department to give weavers the best possible service. Liberal discounts on quantity orders. Complete samples \$1.00, deductible from first \$10.00 order.

LILY MILLS COMPANY
Handweaving Department
SHELBY, NORTH CAROLINA

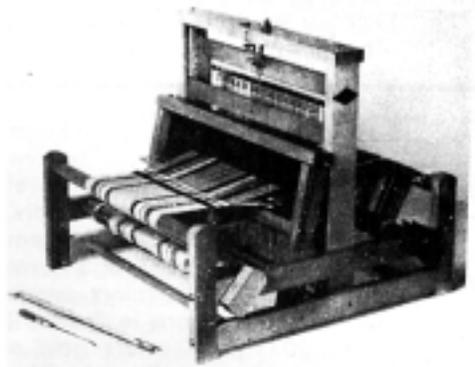




The popularity of the LECLERC 4-harness counterbalanced loom is well deserved. Because of the loom's solidness, strength, easy action, efficiency for threading as well as weaving, and simplicity, there are more Leclercs in use in Canada and the U.S. than any other make of loom. The loom is completely reliable. There are four weaving widths: 27", 36", 45", 60". LECLERC also furnishes auxiliary equipment of excellent design and quality, and several other loom models. Particularly useful is the little 14" wide, 2-harness table loom. This is so inexpensive that it serves the person wishing an introduction to weaving with little expenditure.

NILUS LECLERC INC
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LECLERC LOOMS and all other LECLERC equipment are sold through many agents throughout the U.S. and Canada. For a complete catalogue and the name of your nearest dealer, write to: NILUS LECLERC INC.



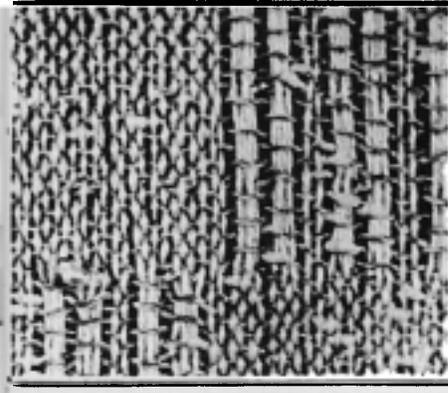
SUMMER COURSES: BANFF SCHOOL OF FINE ARTS

Instruction in Handweaving from July 3 to August 7, 1957.
Ethel Henderson and Mary Sandin, instructors.
For Calendar write: Director, Banff School of Fine Arts
Banff, Alberta, Canada

25th Anniversary Session
University of Alberta
BANFF SCHOOL OF FINE ARTS

YARNS

The weaver interested in purchasing **yarns from job-lots** will find Frank Kouble an excellent source. Mr Kouble purchase many types of yarns from mills with over-stocked inventories, bankrupted mills, liquidated mills. As these are bought below cost, great savings are passed on to the handweaver. In these constantly-changing stocks are unusual yarns, unavailable elsewhere. Write for samples stating special yarn interests, to: FRANK KOUBLE CO, PO Box 82, VALLEY FALLS-LONSDALE, RHODE ISLAND.



robin and russ HANDWEAVERS

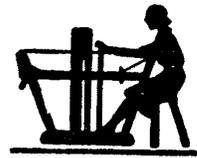
Prepared to meet all the weaver's needs for equipment, yarns, publications, and accessories, ROBIN & RUSS specialize in exclusive lines of unusual yarns. Silks in a variety of sizes and colors are their emphasis. A new yarn is Ramie, size 20/2, bleached white, 3,000 yards per pound at \$3.20. Originally known as "China Grass," Ramie is a bast fiber with twice the strength of cotton, twice as strong when wet as dry, no shrinkage, comparative immunity to mildew, and much eye-appeal. The warp for this curtain material is Ramie set at 24 ends per inch, threaded to the 10-thread M's and O's unit. Weft is their linen and acetate nub, 2,400 yards per pound, in colors, \$3.50. For full directions see the February 1957 WARP AND WEFT. Write for samples and information.

632 santa barbara street • santa barbara, california

BOBBIN and SPOOL WINDING and YARN MEASURING EQUIPMENT, which will "last a lifetime."

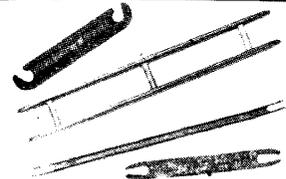
Manufacturer and sole distributor of the WE-GO WINDER and the WE-GO YARDAGE COUNTER which the Shuttle Craft Guild has found to be the most satisfactory equipment for these purposes. Also instruction, accessories and general supplies.

HAND WEAVERS WORK BASKET, Grace D Blum, Box 691, RR 1, West Chicago, Ill.



SHUTTLES OF ALL KINDS—27 varieties

Throw, Belt, Flat, Rug, Twido, Chanel-Stick (original design), and Pick-up Sticks and Shed or Sword Sticks. The shuttle you want must surely be here. Send for illustrated descriptive leaflet from: CODDIE PRODUCTS COMPANY, 2764 29th Avenue, North St Petersburg 4, Florida.



Directory of Handweaving Services

This section is planned to answer the constant flow of inquiries to the Shuttle Craft Guild from new weavers who wish to locate a near-by instructor or to know of local sources of supply, from Guilds who wish to secure speakers or a capable person to direct a workshop, from weavers who are traveling or are moving and wish to establish weaving contacts in new localities. We hope that this section will grow until it is a truly comprehensive DIRECTORY for all the small commercial and instruction services in the United States and Canada, and a clearing bureau for exhibits and for lecturers and workshop leaders. Classified

YARNS

Marie Phelps, Strawberry Hill Studio, Sherman's Point Road, Camden, Main. 20/2 linen, snow white, \$3.65 a pound; 4 beautiful colors at \$4.75 a pound. Custom dyeing of 20/2 linen, minimum quality 30 pounds, to a color. Prices post-paid.

The Craft Shop, 448 So Coast Blvd, Laguna Beach, Calif. Imported Norwegian and Swedish Homespun, 18 colors. Swedish linen bleached and natural 12, 16, 20. Knox Mercerized linen 30/2 in 35 colors. Bernat Fabri in 32 colors. Also accessories.

Maypole Handcraft Yarns, 8300 S E McLoughlin Blvd, Portland, Oregon. Thirty-six colors, 100% English-spun worsted yarns in two sizes on 2-ounce tubes: Willamette 700 yards per tube, and Clackamas 1050 yards. Samples, 10c.

GENERAL SERVICES

Countryside Handweavers, 5605 West 61st St, Mission, Kansas. SILICONING of Yardages a specialty. Also yarns, Looms, Accessories, Books. Mail orders accepted.

The Garrisons, 5 Cherry Tree Lane, Middletown, New Jersey. Instruction to beginners. Agent for the HERALD LOOM and accessories, and Maypole yarn. Custom weaving. Visitors welcomed. Mail orders accepted.

EXHIBITS

Tacoma Weavers Guild Traveling Exhibit. Ready for September 1957. Groups desiring information write to Mrs C D Schwartze, Exhibit Chairman, 2302 Tacoma Road, Puyallup, Washington.

INSTRUCTION

Kate Van Cleve, The Garden Studio, 14 Marshal Street, Brookline 46, Mass. Master Craftsman and Medalist, Society of Arts & Crafts, Boston. Certificate Courses in Weaving.

PUBLICATIONS

Mary E Black, Box 14, Bedford, Nova Scotia, Canada. HANDWEAVERS REFERENCE, \$3.25, postpaid. An index of subject-matter in several classifications for the basic handweaving periodicals and books. Makes any weaving library useful.

Alena M Reimers, West Pines Hotel, Joliet, Illinois. WAYS TO WEAVE OVERSHOT. Loose leaf manual in three-ring binder, well illustrated including 16 woven samples, well organized and printed. Good for study groups. Order direct, \$10.00 post-paid.

