



VOLUME IV NUMBER 4 OCT.-NOV. 1939

THE WEAVER

PRICE 25c

THE WEAVER

VOLUME IV NUMBER 4

C O N T E N T S

Go Exploring With Your Loom Page 3
by Elizabeth Roberts

Variety on a Long Linen Warp Page 5
by Veva N. Carr

The Woven Sheaf Stitch Page 9
by Clara M. Youse

How Many Ways to Weave Honeysuckle? . Page 11
by Berta Frey

Gauze Weaving Without Harnesses . . . Page 18
by Josephine Marie Ryan

Questions and Answers Page 20
by Mary M. Atwater

Again the Twill Weave Page 21
by Mary M. Atwater

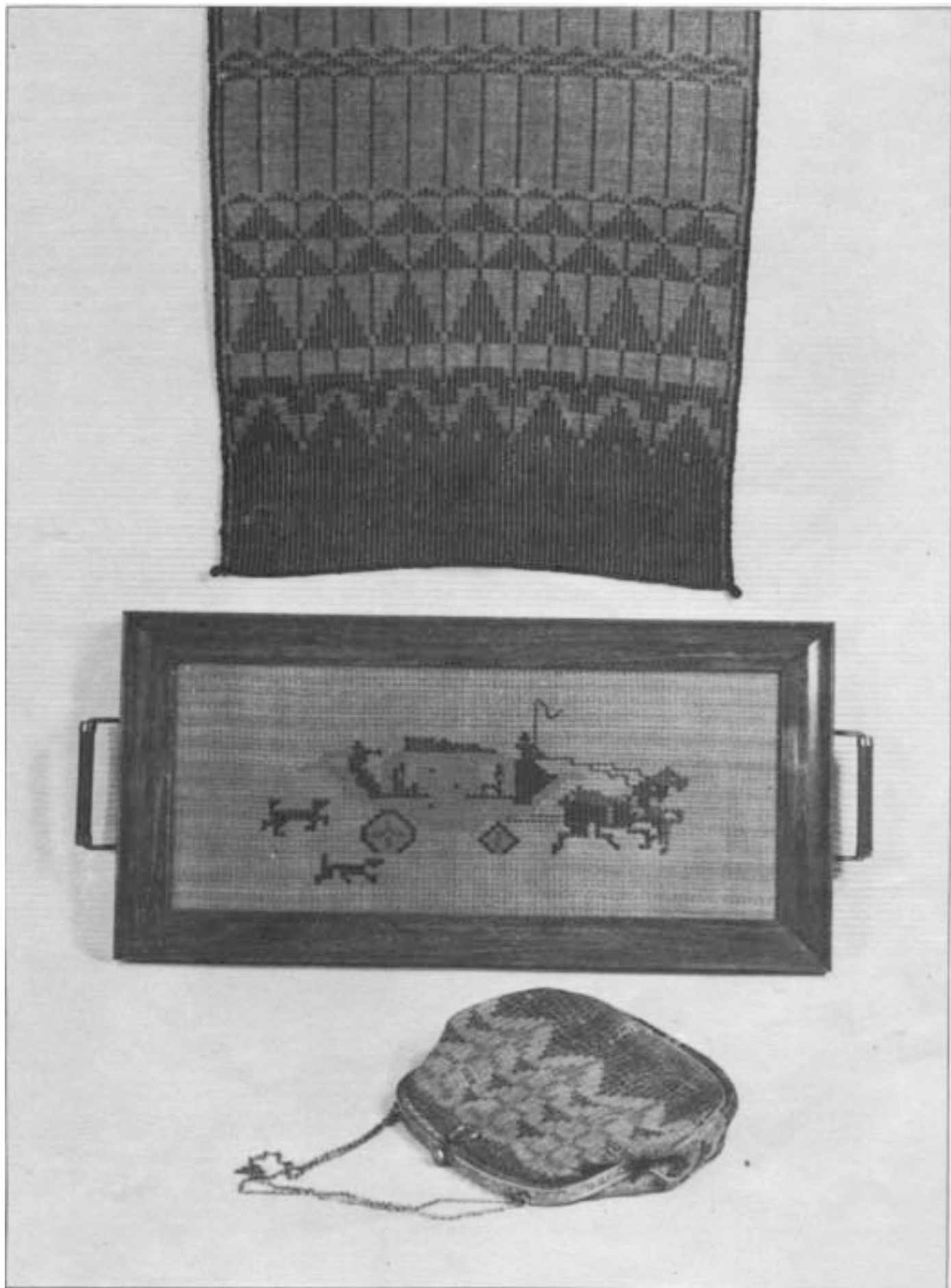
Give Life to Your Exhibit Page 25
by Elizabeth Roberts

A Weaver's Trip to Peru Page 27
by Nellie Sargent Johnson

The Seattle Weavers Guild. Page 30
by Doris L. Henderson

The Weaver, published quarterly in months January, April, July and October by Emile Bernat & Sons Co. Editorial offices, 89 Bickford Street, Jamaica Plain, Mass. Price, \$1.00 per year.

Copyright 1938 by
Emile Bernat & Sons Co.



VARIETY ON A LONG LINEN WARP

By VEVA N. CARR

FOR THE PERSON who likes to work with his hands, there is no craft that can compare with weaving, and can furnish more adaptability to the needs and pleasure of an individual worker.

There is work for the imagination; plain exquisite textiles for the person with no imagination; the creator of design, color, and for the inquisitive mind which is never satisfied with the findings of some other person but must learn it for himself; the copyist, and so on, and the beauty of it all is, that it takes no long-term training or intensive preparation. Though it does, of course, take some thought and skill, and unless one is satisfied to become simply a "shuttle thrower" they may as well make up their minds that it is going to require a certain amount of work and the use of some gray matter.

It is always interesting to watch beginners groping about until they find some particular phase of the work that especially appeals to them, and any weaving teacher will admit that it is possible to segregate individual capacities from among weaving pupils.

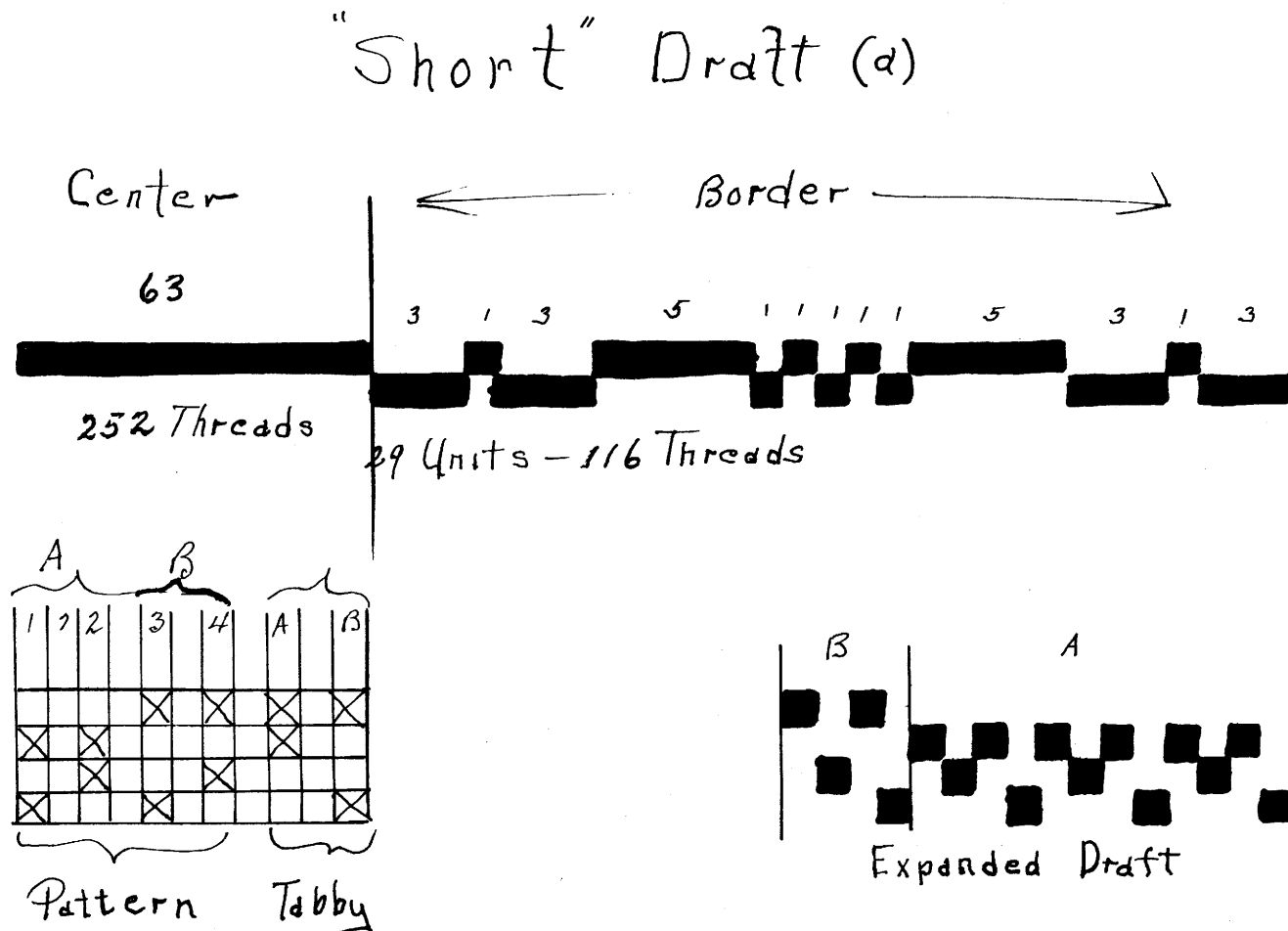
An interesting example is that of the woman who thought she would like to weave. She admitted that

she was slow and felt that she might, perhaps, find it difficult to accomplish a great deal, if anything, from her efforts. She was pains-taking though, and a hard worker.

Starting with a group of weavers, she often remarked that she felt her efforts were rather futile because everyone else seemed to accomplish so much more in one way or another than she was able to do. Her teacher always stressed the fact that just any weaving would never do, but that in each case every piece of weaving should excel in some respect, such as originality, design, color, craftsmanship, and the like, and that each weaver should find the especial type of weaving through which he could best express himself — then go on from there and make that the very best job that could be turned out.

Being an intelligent person, this woman analyzed her capabilities, by no means with a feeling of inferiority but with honest thinking, and concluded that she was slow, that she worked too long over colors which always proved unsatisfactory, and that her imagination along a creative line was also conspicuously lacking.

The result was, after a good deal of effort on her part and a little subtle guiding by her teacher, she decided that she would concentrate on linens.



(a)

Draft (b)



(b)

And so Elizabeth Burleigh has stuck to her linen for several years, has paid for her lessons, her loom, made some money, and delighted dozens of friends with pieces of exquisite linen as gifts. She knows her yarns and their capacity and limitations, her edges are perfect, her work is beaten up as evenly as any commercial work is ever done, and lately she has discovered that she is capable of developing different ways of working off a long warp so there is a variety in the work for her purchasers, as well as for herself.

Miss Burleigh usually warps a long yardage, using a 40/2's linen set at 36 to the inch and about 13½ inches wide. She frequently rethreads her warp and has found that she has no trouble in resleying that warp into a thirty dent reed for pieces she desires to make wider, but in the latter case she uses a heavier weft thread.

The summer and winter luncheon set shown in illustration No. 1, and the towel in No. 2, were made of Bernat's linen weaver (a thread she ordinarily uses for work set at 36 to the inch) with a superfine white tabby No. 25. See draft (a) and drawing for details of this set. For an all over pattern in anything except the summer and winter weave, she finds the linen floss ideal.

She frequently ties a heavy colored linen (such as Bernat's Floss) into her warp, as shown in illustration No. 3, and occasionally instead of putting that

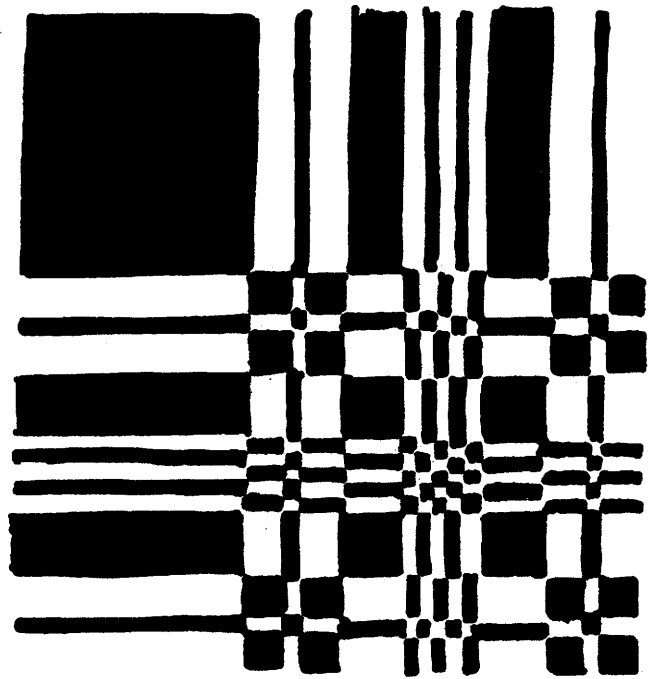
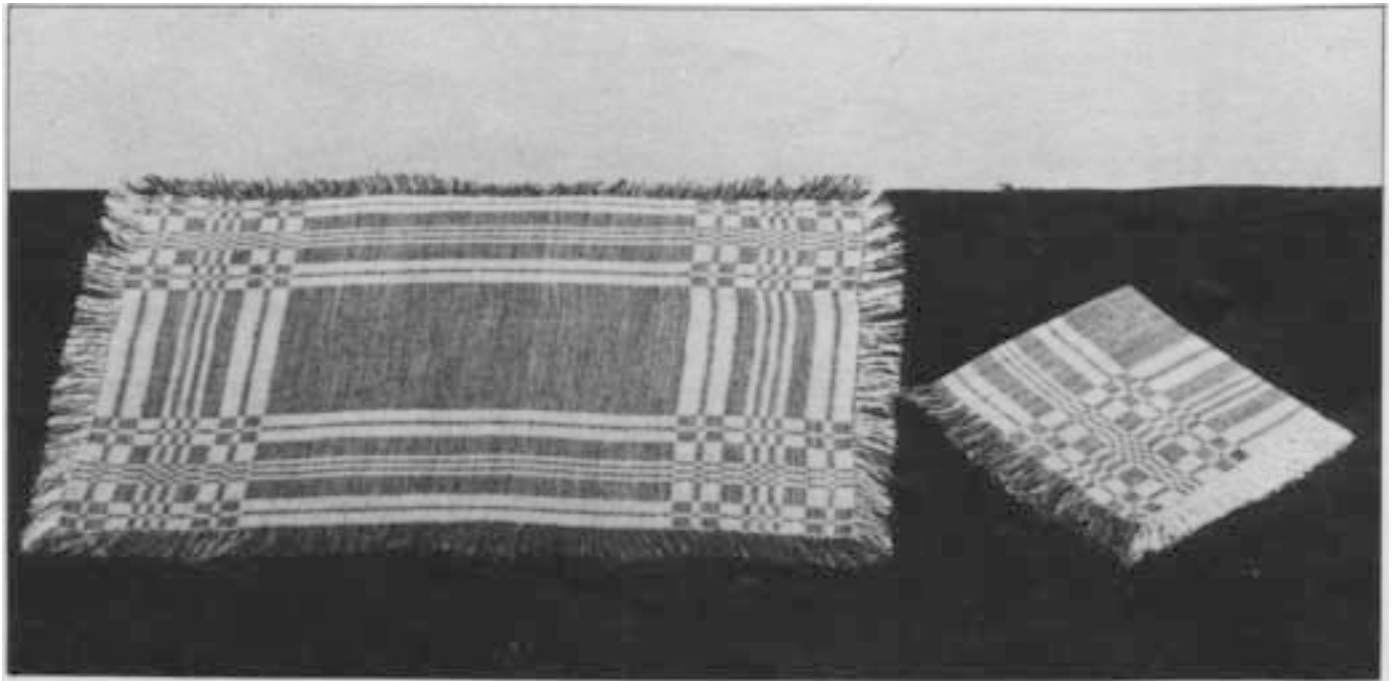


ILLUSTRATION II

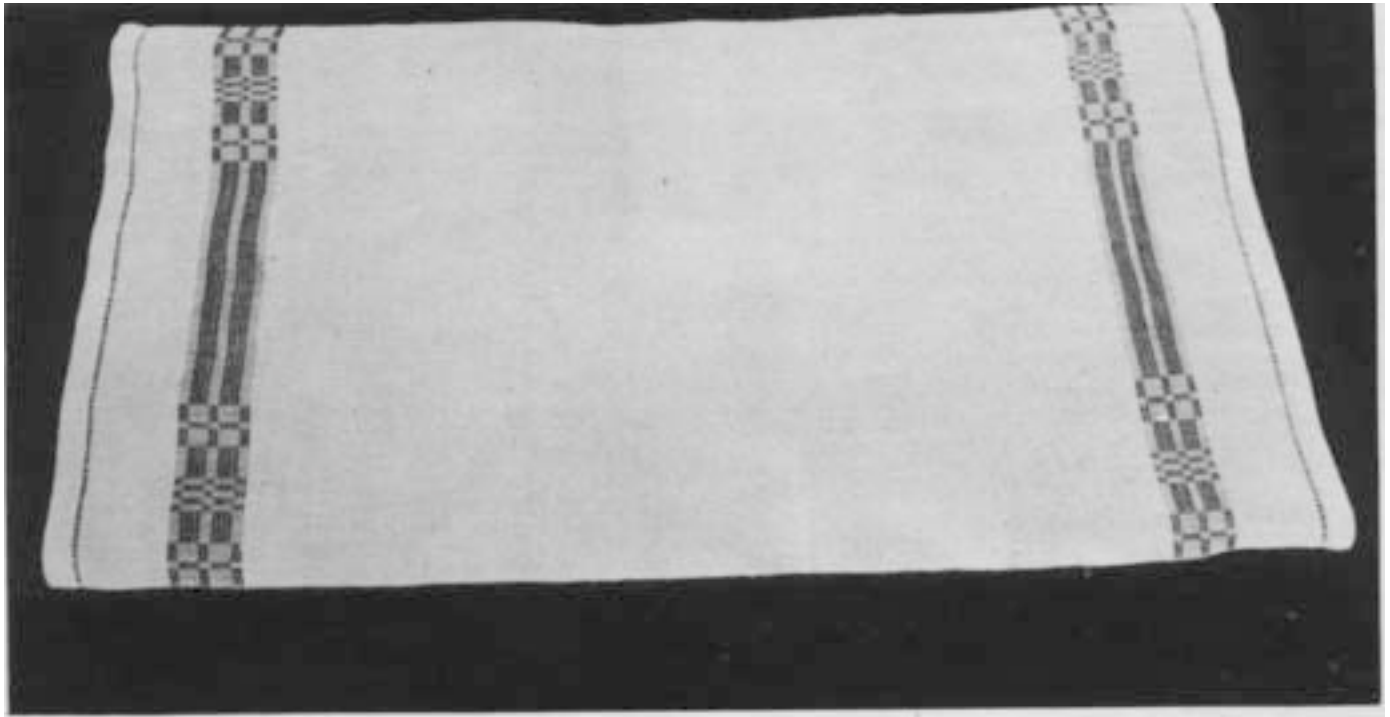
colored effect on the four sides of her napkin, takes it across two sides only. The drafts in illustrations three and four are on a crackle weave, which has frequently been used in the Handcrafter.

Illustration No. 5 shows some pieces done on a miniature wheel draft (b), which is satisfactory for the overshot type of weaving in linen.

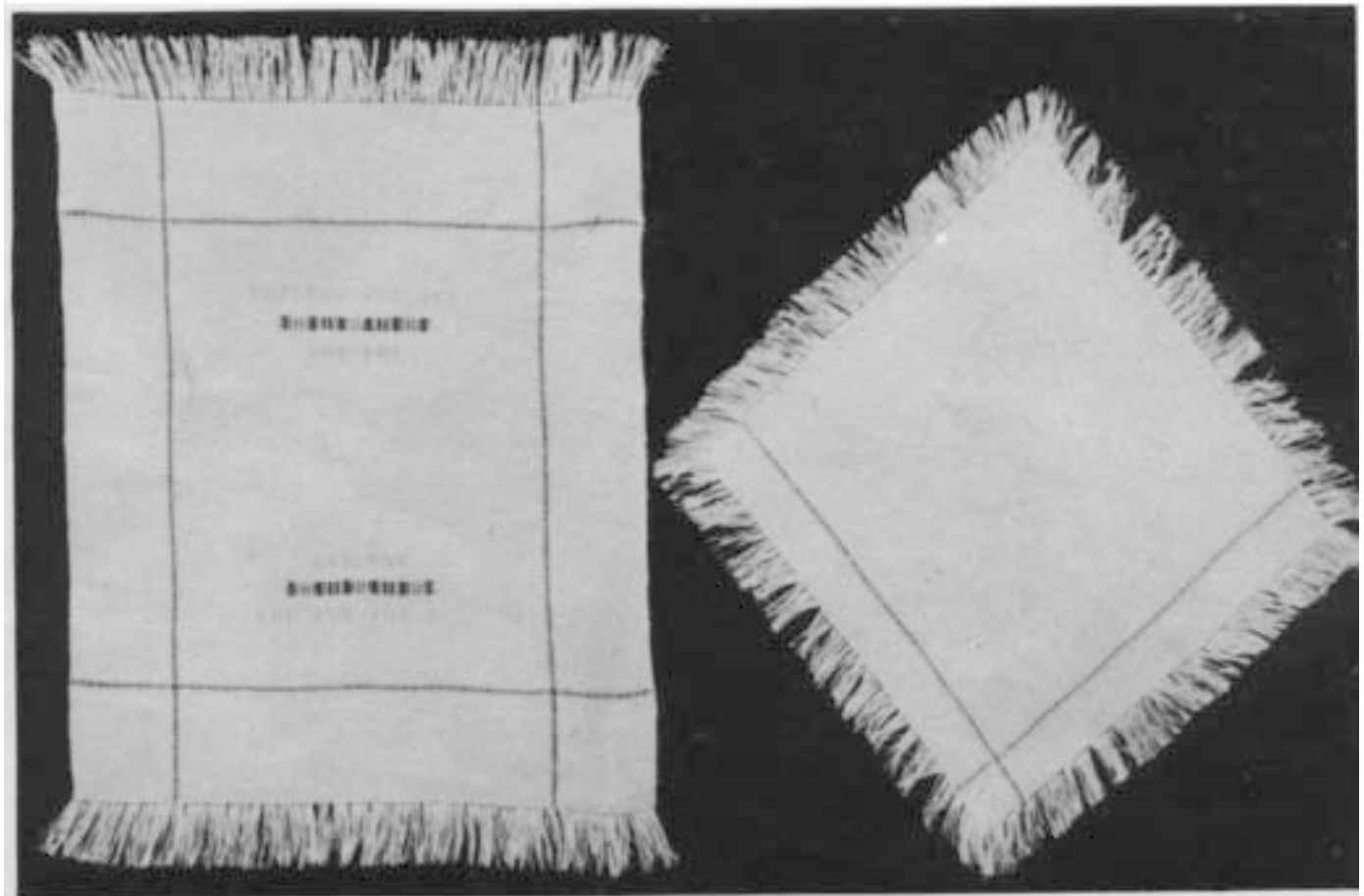
These pieces of linen are all hemstitched by hand, whether using a plain hem or a fringe, and it will be found helpful to put a heavy thread at each point of hemstitching, for this heavy thread may be easily pulled out and thus save cutting ends of the textile threads.



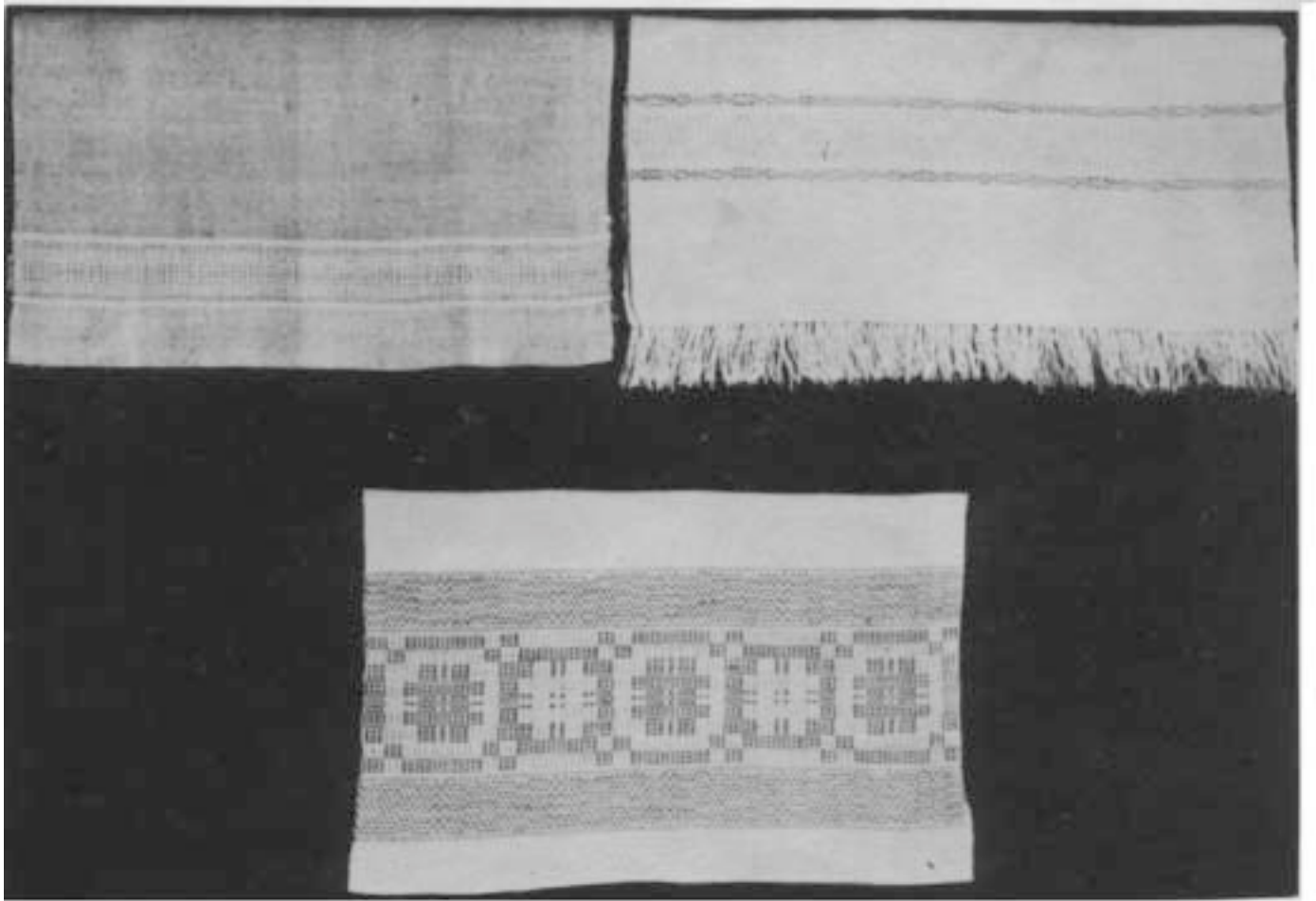
No. 1—Green luncheon set in Summer and Winter weave—Courtesy Elizabeth Burleigh



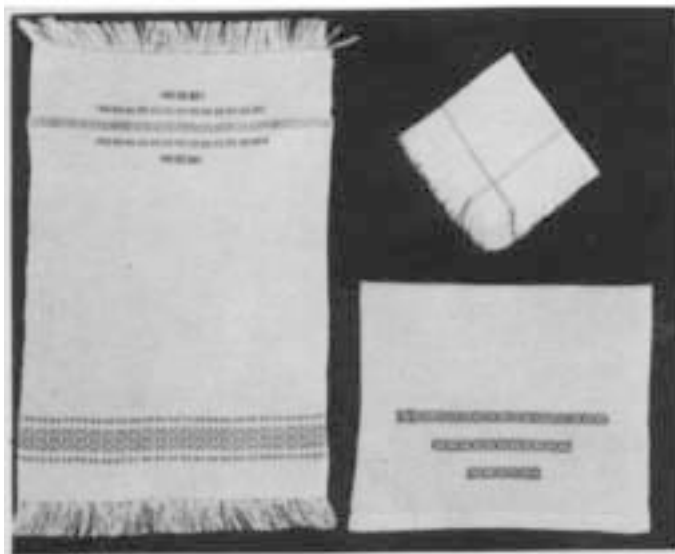
No. 4—are examples of work done in a crackle pattern—a plain green towel with border of orange and yellow; Fringed luncheon set with rose and green border and at the bottom of the photograph, a blue and white luncheon set.



Tray set in Orange, Yellow and Black—Elizabeth Burleigh



No. 4—are examples of work done in a crackle pattern—a plain green towel with border of orange and yellow; Fringed luncheon set with rose and green border and at the bottom of the photograph, a blue and white luncheon set.



No. 5—Blue and white luncheon set with fringed edges, and one of Old gold with black trimmings—Courtesy Elizabeth Burleigh.



Plain Linen Towel with Colored Border

THE WOVEN SHEAF STITCH

By CLARA M. YOUSE

IN the Dictionary of Embroidery Stitches by Mary B. Thomas, there is a very interesting stitch described as a filling stitch, and consists of three vertical satin stitches tied horizontally around the middle with two overcasting stitches.

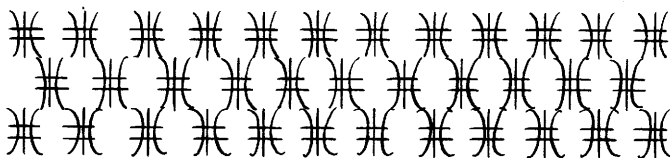
After working the three satin stitches the thread emerges from beneath them on the left and the needle makes two overcast stitches over the "sheaf" without entering the material at all until it is required to pass to the next "sheaf." The little tied sheaves may be set in alternate rows as in diagram, or in close horizontal rows beneath each other.

After giving this stitch careful study I decided that it is similar in construction and character to the little blocks that compose the Bronson weave and which is best described as a plain fabric patterned with blocks composed of short weft skips on one side of fabric and warp skips on reverse side forming small detached figures similar to the Scandinavian lace weave.

While the Bronson weave is very handsome when woven on harness looms of 4-6-8 harnesses it also has many possibilities, and by experimenting on our looms, some delightful surprises are in store for us.

Some weavers have found a less laborious way to emulate this ancient weave by the use of only two harnesses or by using a non harness loom that has only a heddle frame to carry the threads.

When threaded on two harnesses 1-2; 1-2, woven in plain tabby and using a design that has been blocked out on graph paper, a modified Bronson weave will result and the little sheaves that are so effective when embroidered can be woven into the fabric. After examining the blocks in Bronson weave I found that each block consists of six warp threads and six weft threads and resembles the embroidered sheaf stitch on right side of fabric. On the reverse side the little "tied sheaves" assume a different position; instead of being horizontally tied



Sheaf Stitch

they are vertically tied. These little "tied sheaves" are woven into the plain tabby material by following the formula given here and which should be memorized.

Pick up first thread on upper shed.

Miss two threads and continue to pick up one thread and miss 2 threads across web.

Tabby from left—repeat first row.

Tabby from left—tabby from right—tabby from left. These last three shots complete the row of blocks.

From this formula we need only to remember at this stage of the work that an X represents a block and a space represents a skip.

When planning a piece of weaving select design, block out on graph paper. There is freedom for original design in this weave but the most satisfactory results are obtained by using modern designs that are simple in construction.

Warp and weft of the same material but in contrasting colors makes up very well. Egyptian cotton for warp in natural color and a dyed Egyptian cotton for weft in green or blue brings out the design most effectively.

To find out how a design will fit into a given number of threads on loom,—count threads on upper shed, count blocks and spaces on first row of design. For each X the shuttle goes over a pair of warp threads and for each block that is to be missed the shuttle goes under three warp threads plus one extra thread.

After allowing a certain number of threads for margin count blocks and spaces across web, count same number of threads for margin as on other side and you will know just how large a design to use.

In the designs here illustrated some all over effects are shown that would work up well for pillow tops, coverlets, table linen, etc. Some of the designs could be used for corners, borders and stripes.

Illustration No. 6 shows a design for a bureau scarf nineteen inches wide and fifty-six inches long made of Egyptian cotton warp and green linen weaver for weft, threaded sixteen threads to the inch on a warp of three hundred and six threads. Directions for weaving are given below. When starting to weave this piece, weave about four inches in plain tabby, then start the design.

Remember that after each second row of blocks finish with tabby from left, tabby from right, tabby from left.

ROW 1

On upper shed count 12 threads for selvage then—(2 blocks, skip 5 blocks and repeat 5 times) 2 blocks—under 12 selvage threads.

ROW 2

Under selvage—(2 blocks, skip 4 bl—4 bl, skip 4 bl, repeat twice) 2 blocks—under selvage.

ROW 3

Under selvage—(2 blocks, skip 3 bl—6 bl skip 3, repeat twice) 2 blocks—under selvage.

ROW 4

Under selvage—(2 blocks, skip 2 bl—8 bl, skip 2 bl, repeat twice)—under selvage.

ROW 5

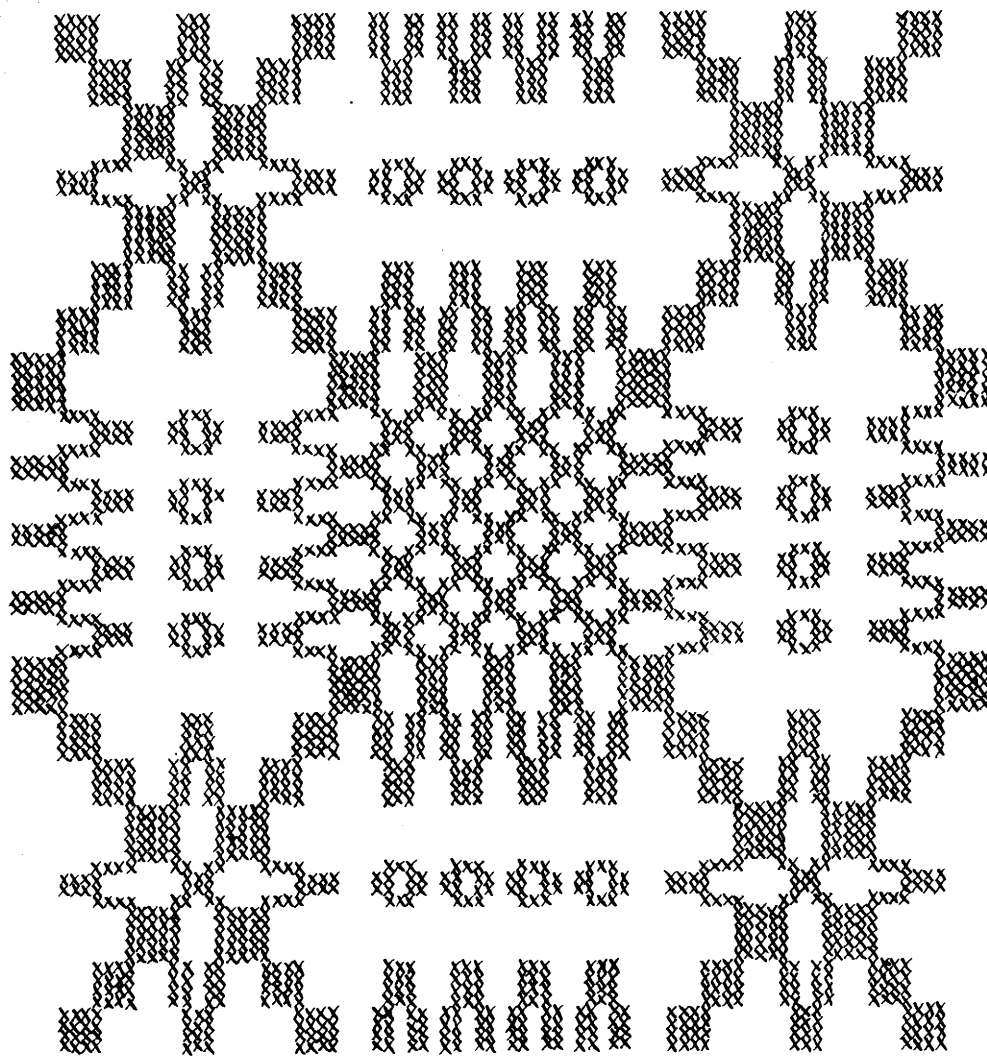
Under selvage—(2 blocks, skip 1—10 bl—skip 1, repeat twice) 2 blocks—skip 1, under selvage.

ROW 6

Under selvage—one row blocks—under selvage.

ROW 7

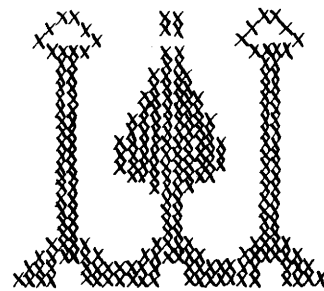
Under selvage—6 blocks, (skip 1—2 bl—skip 1—10 bl, repeat once) skip 1—2 bl, skip 1—6 bl, under selvage.



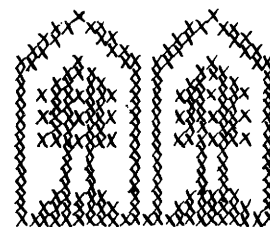
No 1



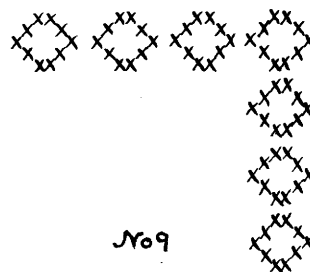
No 6



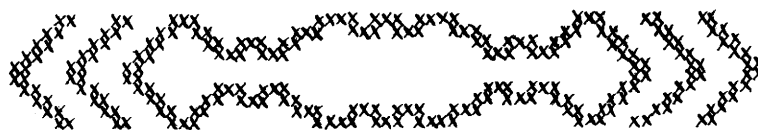
No 7



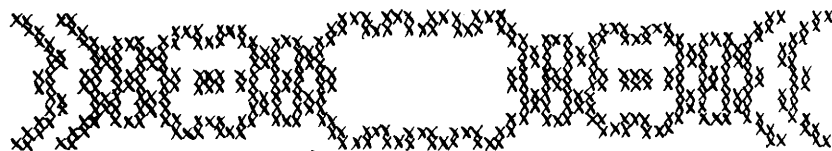
No 8



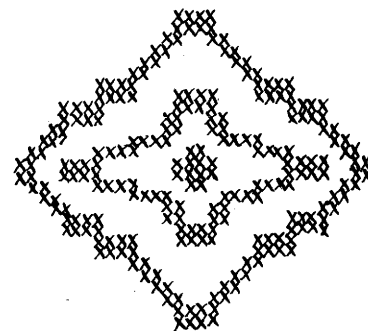
No 9



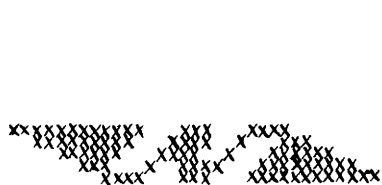
No 2



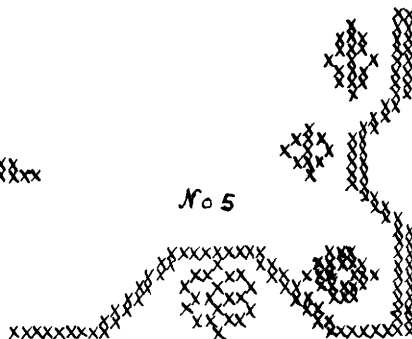
No 3



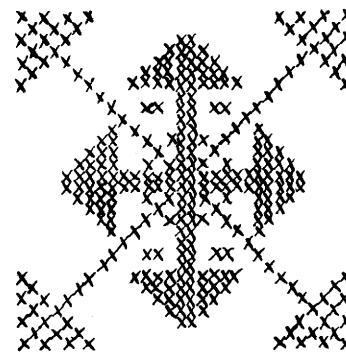
No 10



No 4



No 5



CLARA M. YOUSE

HOW MANY WAYS TO WEAVE HONEYSUCKLE?

By BERTA FREY

ALL weavers know Honeysuckle. Some adore it and others abhor it; and both with good reason.

Once upon a time I heard it said with an air of finality and authority, "There are thirty-two ways to weave Honeysuckle." Now this is somewhat of a mis-statement. Doubtless there are many more than thirty-two ways of treadling or arranging it, in the generally accepted meaning of the term "Honeysuckle", and possibly there are thirty-two ways of weaving it, though I have not discovered them all. Its endless possibilities fully warrant the high esteem in which it is held by many. Of those who do not like Honeysuckle, I think that possibly they are tired of the original thirty-two varieties and have not yet discovered the far corners of this Happy Hunting Ground.

Honeysuckle is really not the name of a weave, — it is the name of a *pattern* or design, and that pattern, reduced to its mere skeleton, — to its design in blocks, — regardless of how it may be woven, is shown at the top of the page of drafts. Having the pattern analyzed, it can then be adapted to many weaving techniques, with varying degrees of interest and beauty.

The familiar draft for Colonial Overshot weaving (draft a) has many interesting variations, not all of which are as widely known as they deserve to be. At A of illustration 1 is our good friend woven as drawn in, in the orthodox Colonial weave.

At B is a very different appearing fabric, though the pattern is not changed. This fabric is an excellent one for upholstery; it is closely woven and very substantial. The warp must not be sleyed too closely, for the weft threads beat up very closely and the warp is completely covered. The two weft threads are identical in size, two colors or two shades of the same color, and finer than the warp. The treadling for the pattern color is the same as for the regular weave, that is, as drawn in. There is no tabby, but the second weft thread (the binder) is woven on the opposite pair of harnesses from the pattern.

The treadling is: pattern 1-2 followed by binder 3-4, and these two shots alternate until the first block is "square" — this of course, will depend upon the number of warp threads per inch and the size of the weft yarn. The next pattern will be 2-3 followed by binder 1-4 till that block is square; then pattern 3-4 with its binder of 1-2, and finally 1-4 pattern followed by binder 2-3. One color is kept throughout for the pattern and the other color for the binder.

Still on the Colonial draft and still in the tapestry-like fabric is C of Illustration 1. Here there are four shuttles used, each with its own color. The treadling never varies — always

treadle 1-2	weave with color A
treadle 2-3	weave with color B
treadle 3-4	weave with color C
treadle 4-1	weave with color D

A natural outgrowth of C is the sample shown at D of Illustration 1. It is also woven with four shuttles and is at its best when woven with four shades

of one color. The treadling never varies, but the colors shift places. The more weft threads there are in each block, the more acute will be the angle of the dominating line. The piece illustrated has ten shots of each color in each block. It is woven as follows:

treadle 1-2 and weave with shade A
treadle 2-3 and weave with shade B
treadle 3-4 and weave with shade C
treadle 4-1 and weave with shade D,

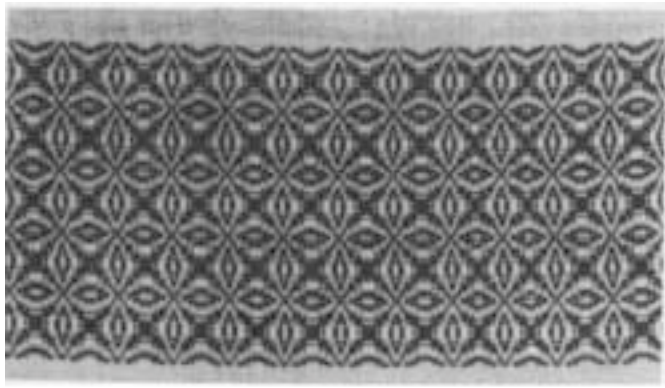
and repeat these four shots nine times, making forty weft shots in all. Then shift the shuttles to weave 1-2 with shade B, 2-3 with shade C, 3-4 with shade D and 4 with shade A, until forty shots have been made. The shuttles are again shifted to weave 1-2 with C, 2-3 with D, 3-4 with A and 4-1 with B. The fourth shift brings shade D into first position (1-2) and C is on the fourth position. The next shift, of course will bring all colors back to their original positions and the pattern begins over again. Throughout the entire piece, the order of treadling never varies from the regular 1-2, 2-3, 3-4, 4-1.

For all of the above variations, the weft must be fine enough and the sley coarse enough to allow for very close packing of the weft, and complete covering of the warp. Linen Warp (40/2) sleyed at 20 to 24 per inch, or ordinary four ply carpet warp sleyed at 14 to 16 per inch make good foundations. Weaving Special is an excellent weft; Perleen woven over Linen Warp sleyed at 15 will also result in a most satisfactory fabric.

Another type of Bound-weaving is that which is widely known as "Italian" weave. It is shown at E of Illustration 1. Three colors of weft are used and it is somewhat more complicated than the foregoing kinds. In this type, the warp is not completely covered, and the chief interest is in the play of color, which is lost in the photograph.

The main color is woven as drawn in; there are two binders, neither of which is on the tabby combination of harnesses. It takes four weft shots to make one "count" in the weave. The rule for determining the treadling is easier to follow than to describe. Any pattern combination of harnesses, for example 1-2, should be followed by a binder combination having one harness in common, which would be 1-4 or 2-3, a second pattern shot on the 1-2 combination should be followed by the binder combination not used previously. Perhaps it is most easily understood by an examination of the directions for treadling. The sample shown was started on the 3-4 combination, and reading *down* shows the treadling used to produce a blue pattern in the orthodox Honeysuckle design. Read *across* to obtain the actual order of treadling.

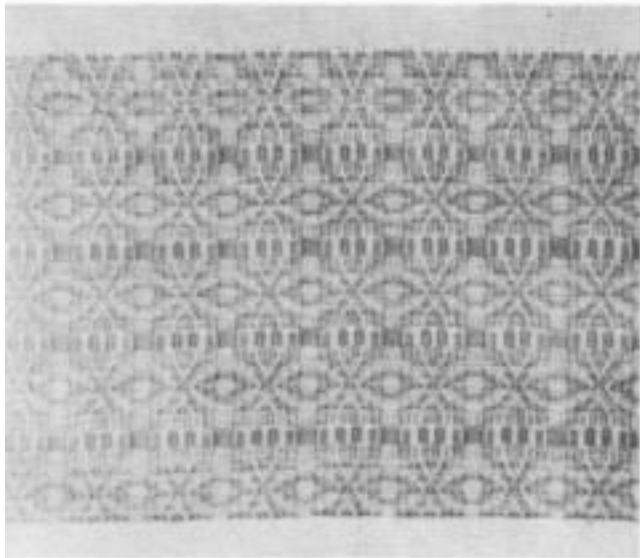
Blue	Gray	Blue	Rose	
3-4	2-3	3-4	1-4	three times
2-3	1-2	2-3	3-4	two times
1-2	1-4	1-2	3-2	two times
1-4	3-4	1-4	1-2	one time
3-4	3-2	3-4	1-4	
3-2	1-2	3-2	3-4	
1-2	3-2	1-2	1-4	— this is the center



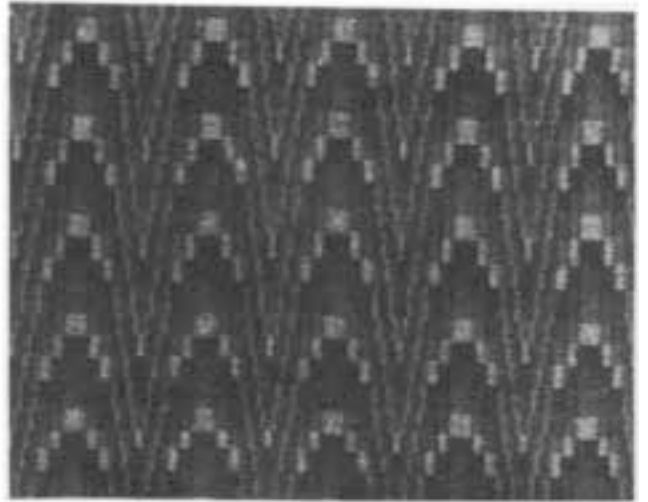
A



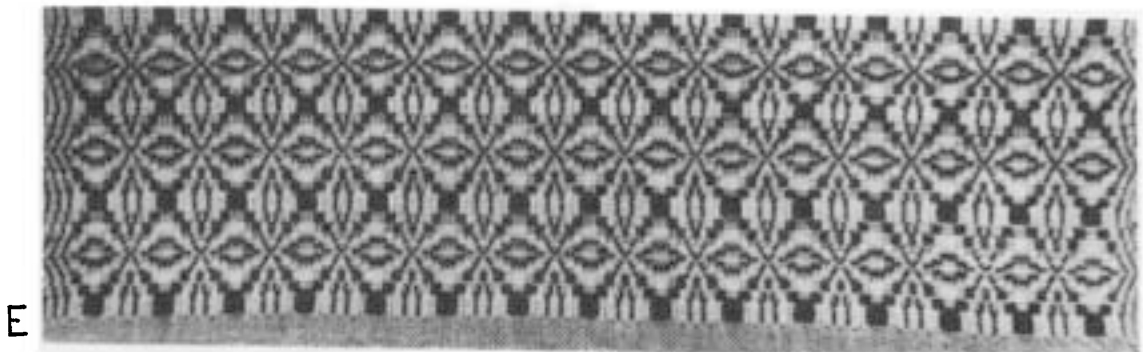
C



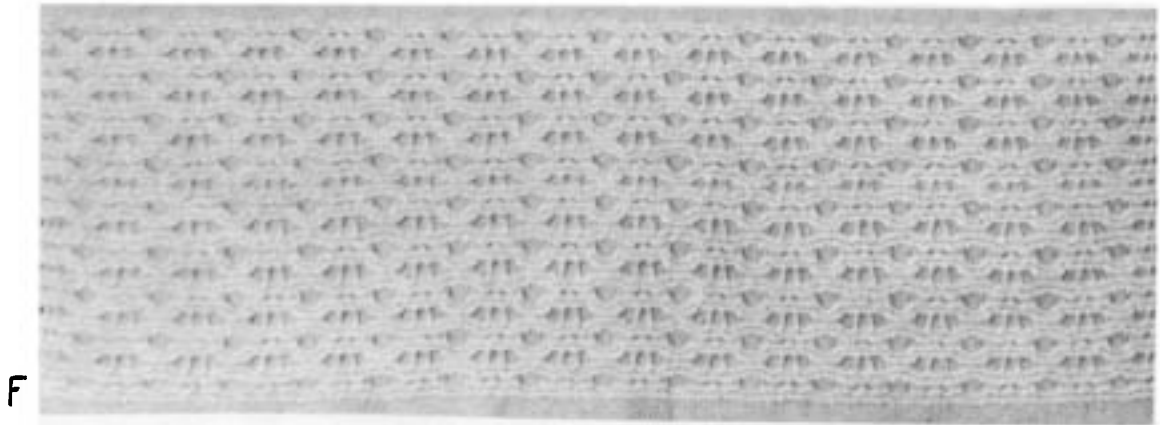
B



D



E



F

Illustration I

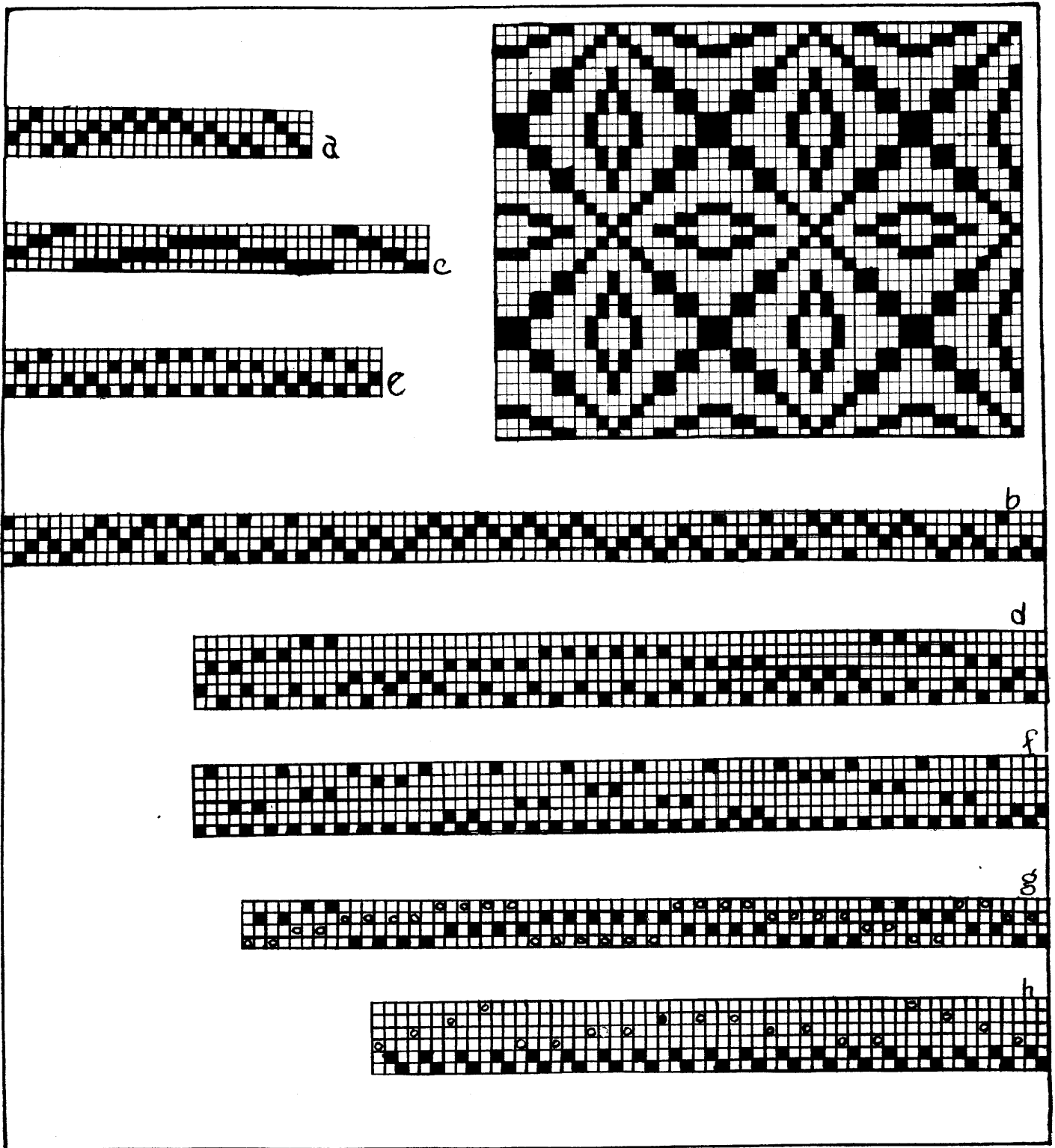


Diagram and Drafts

or reversing point of the pattern. In order that the relative positions of the binder colors may remain the same, the sequence of rose and gray must be reversed with the reversing of the order of treadling. Continue:

Blue	Rose	Blue	Gray	
3-2	3-4	3-2	1-2	
3-4	1-4	3-4	3-2	
1-4	1-2	1-4	3-4	
1-2	2-3	1-2	1-4	two times
2-3	3-4	2-3	1-2	two times.

With the beginning of a new repeat of the pattern, the rose and gray are returned to their original positions. A little study of the above treadling will explain the relation of the binders to the pattern more easily and clearly than a detailed description. Other arrangements than the "as drawn in" one may be woven in this manner, and the working out of treadling directions is not a too difficult task.

The type of weaving known in the Scandinavian countries as "Halkrus" or "Gagnefkrus" and quite often called "Honeycomb" may be done on any Colonial draft, and Honeysuckle is no exception. The characteristic appearance of the Honeysuckle pattern is lost in this "Lacey-Weave" or Honeycomb technique, because four of the seven blocks that form the pattern are only two warp threads in size. The sample shown at F of Illustration 1 used only two of the three larger blocks. This technique was described in Vol. III, No. 3 of the Weaver, and a detailed description is not needed here. The warp and colored weft in the sample shown are the same size, about a 10/2 cotton, and the heavy tabby thread is "Darnetta". The sample was woven as follows:

Treadle 1-3 weave with Darnetta

treadle 2-3 weave with Darnetta.

Treadle 3 weave with colored cotton

treadle 4 weave with colored cotton, and repeat these last two shots two times more, making six weft shots. Then two heavy tabby shots.

Treadle 1 weave with colored cotton

treadle 2 weave with colored cotton, and repeat these two shots until six have been woven.

Only two of the pattern blocks have been used. It is possible to use the 2-3 combination as the 1-2 and 3-4 have been used, which will elaborate the pattern to a certain extent. The 1-4 combination has no large skips and does not show to advantage.

Here then, on the much despised, or adored, Colonial draft for Honeysuckle, are six techniques of weaving having four separate and distinct patterns and five textures. There are many more textures possible by varying the treadling, and substituting various wefts. And of course, there is the method of picking up only parts of the design when weaving in the orthodox colonial way. All of the variations given for Honeysuckle can be woven on any Colonial draft, though the results on some may be more or less satisfactory. But the Colonial draft can be discarded entirely and new drafts fitted to the design that will start the weaver off on an almost endless chain of exciting adventure.

"Jamptlandvav", better known in America as "Crackle" can be fitted to the Honeysuckle pattern, the draft for which is given at "b" on the diagram. There are as many possible variations of treadling on this draft as on the original colonial one. The pattern is changed in appearance because of the characteristic overlapping of the blocks and the more truly twill effect. At A of Illustration II is shown a sample of Crackle weave done on the Honeysuckle pattern, and woven as drawn in. This weave is now so familiar to American weavers that a detailed description is not needed.

The Summer-and-Winter adaptation of Honey-

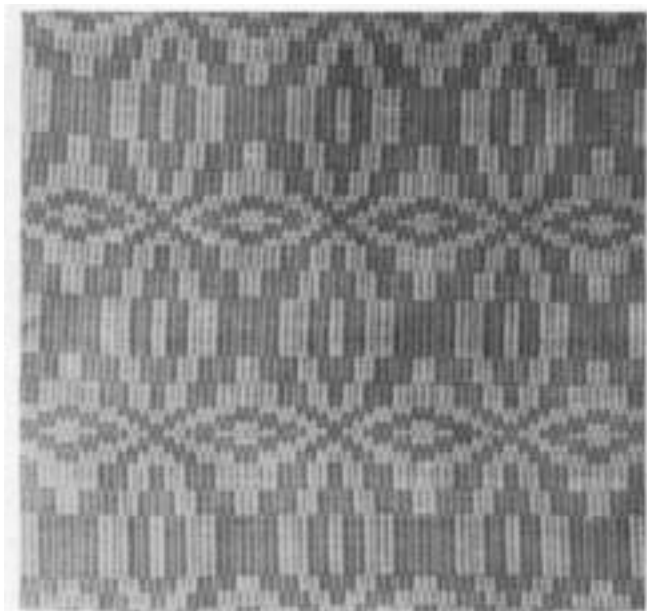
suckle (B of Illustration II) has been doubled in size. A single unit block in Summer-and-Winter is likely to lose much of its identity and appear more as a transition between other blocks; particularly is this true if the weaving is done in pairs and the blocks joining each other at the corners.

Honeysuckle, being a four block pattern requires six harnesses when translated into Summer-and-Winter weave. The draft for the larger arrangement is written in the short manner at c; and for the single unit size it is written out in the long way at d on the diagram of drafts. Only one piece of Summer-and-Winter is illustrated, but this draft is subject to all the many variations that are possible on Summer-and-Winter drafts generally. It may be woven singly or in pairs; the blocks may meet in a twill, or the background may make the twill to separate the blocks; the various blocks may be woven individually (as in the sample) or combined to produce any number of different patterns. And whether the blocks are combined or kept separate, it may be woven on opposites with results somewhat similar to the Colonial on opposites, in that the warp threads are completely covered, resulting in a heavy, tapestry-like effect.

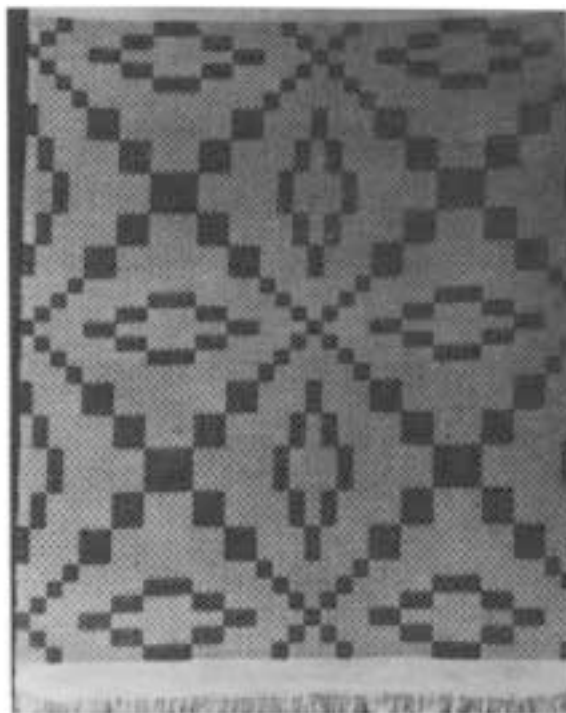
There are many weaves for which we, in America, do not have official names. Particularly is this true of that weave which in its several forms is variously known as "Linen Weave", "Speck Weave", "Lace Weave", "Bronson Weave", etc. Quite generally accepted is the name "Bronson" for that weave having warp overshots on one side and weft overshoot on the other. Bronson is sub-divided into Spot-Bronson and Lace-Bronson.

Honeysuckle does not adapt itself too well to the spot type of Bronson. If two warp threads are allowed to a single unit of design, they are almost lost; and if four threads are allowed, the large center spot would call for a weft skip of twelve threads, which would be entirely too large. Spot-Bronson would be a five harness weave, but by eliminating one small spot it can be made to fit four harnesses and the results are really better, for the design gains in unity by being more compact. The resulting change in pattern is really not obvious. The weave is illustrated at C of Illustration II, and the draft is given at e. Woven with 40/2 Linen Warp for both warp and weft, and having 30 or 32 threads per inch, this would make excellent towels. The treadling is like that of any other Spot-Bronson, and there are many possible variations that would add interest.

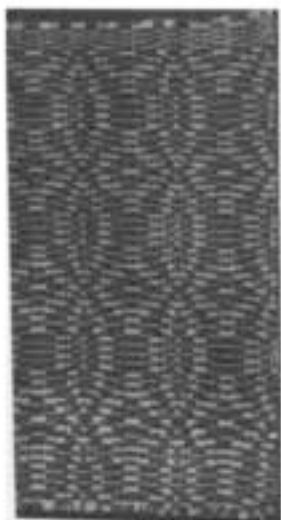
Lace-Bronson (D of Illustration II) is, of necessity, a large pattern. Lace-Bronson is obtained by combining several "spots" to make a block of "lace". In order to be lace-like at all, the small blocks must have at least four spots, and to keep the proportion, the large center block must have six spots in each direction. It is the threads separating the spots that produce the open, lace effect. In order to have these threads in the warp, there must be a harness to carry them. Thus, Honeysuckle in Lace-Bronson becomes a six harness weave. The sample illustrated shows it woven as drawn in, but combinations of blocks are possible in this weave just as in Summer-and-Winter, since the warp threads for each block are carried on their respective harnesses.



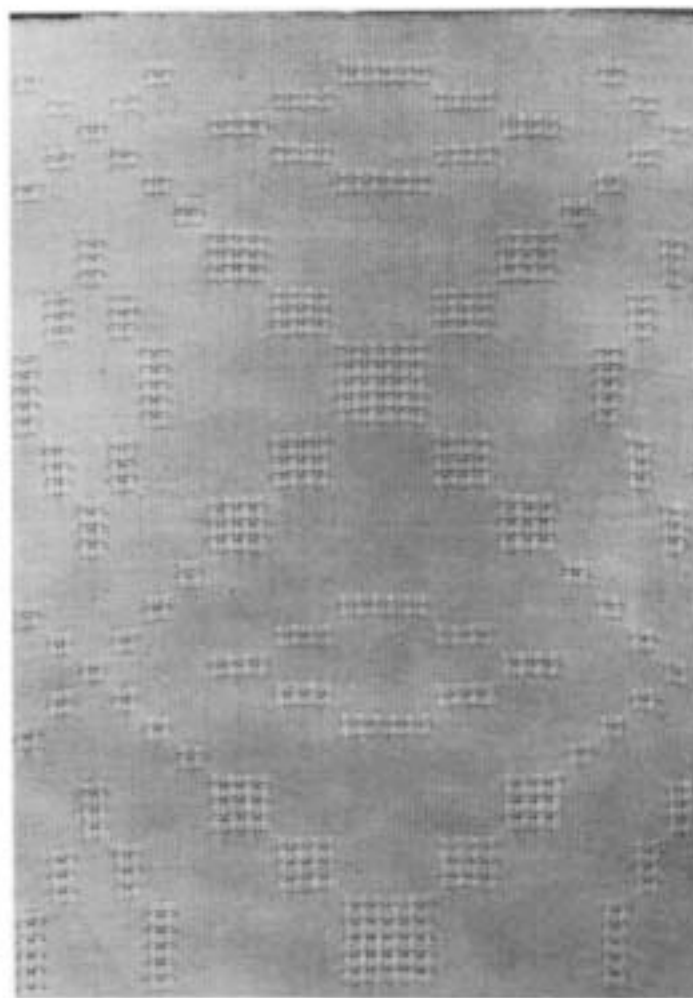
A



B



E



D



C

Illustration II

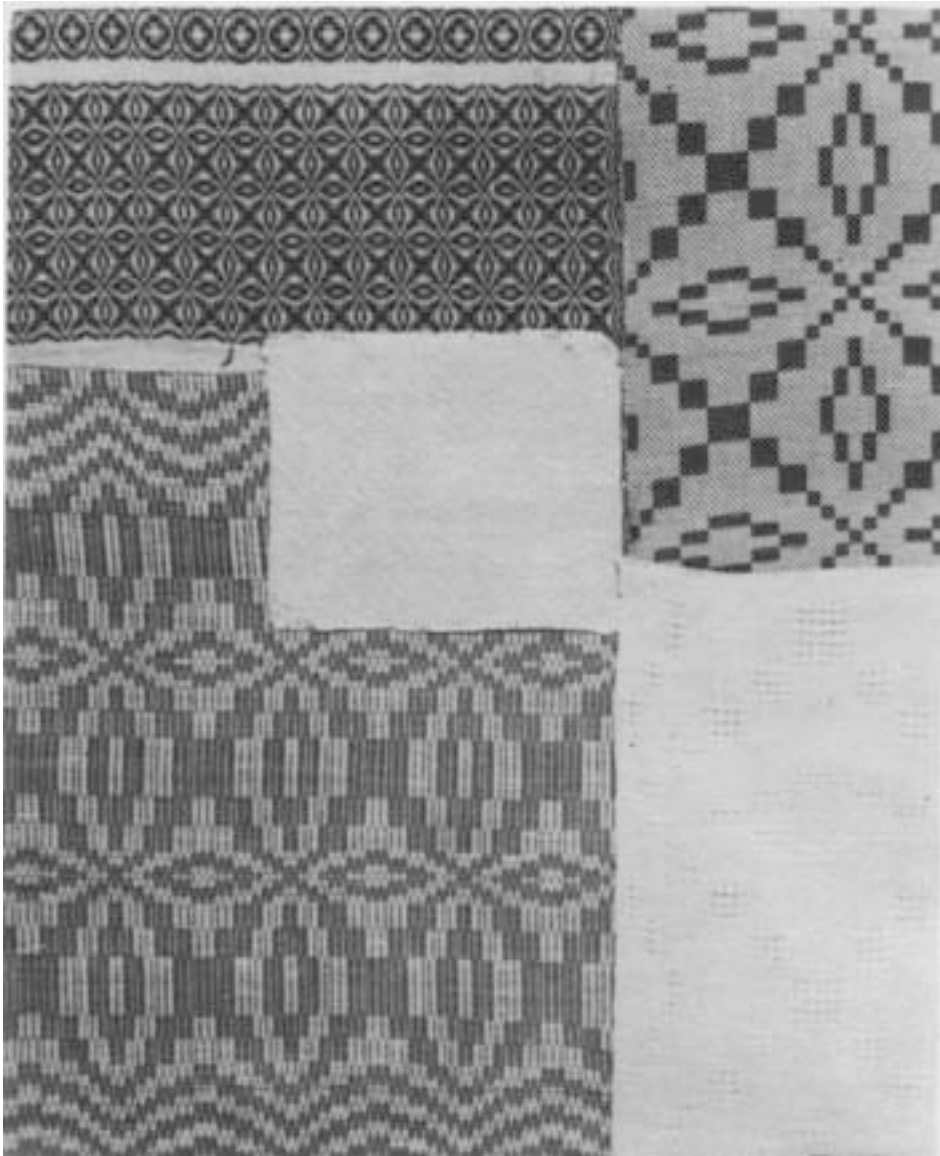


ILLUSTRATION III

There are six warp threads in each unit of the pattern, and in this double size Honeysuckle, there are 36 units, making 196 threads to each repeat of the pattern. Drafts for Lace-Bronson are written in two ways. The short draft is written exactly the same as the short draft for Summer-and-Winter; but the actual threading, of course is entirely different. In Summer-and-Winter, the first unit of the draft means that the warp is threaded 3-1-3-2 and these four threads repeated to make a total of eight. In Lace-Bronson the first unit should be read to mean that the warp is threaded 2-1-2-1-6-1 and these six threads repeated. The repetition of Lace-Bronson draft is confusing if written out in its entirety.

6, or 20 threads the pattern may be enlarged proportionately to fit other threads used for different textures, depending on the ultimate use to which the fabric is put.

The pattern is woven on opposites; the color as well as the design is in the warp, and the weft threads are very slightly, if at all, visible. The pattern weft is quite heavy and the binder weft is slightly finer than the warp. It is treadled:

1-2 pattern followed by 3-4 as a binder two times
 2-3 pattern followed by 1-4 as a binder two times
 3-4 pattern followed by 1-2 as a binder two times
 1-4 pattern followed by 2-3 as a binder two times,
 etc. etc. The pattern treadling is as drawn in, a -

It is much easier to follow if each unit is written out only once, and the figure above the unit of six squares indicates the number of times that particular group of threads should be used. See draft f for the Lace-Bronson method of setting up a loom. The treadling is no different from any other Lace-Bronson weave.

Returning to the four harness weaves, there is the warp face rep type of fabric used extensively in the Scandinavian countries for rugs and called "Mattor". It was quite fully described in the October 1936 issue of *The Weaver*. The sample at E of Illustration II was woven of Perleen, the six untwisted strands covering the weft much better than a single Perle of equivalent size. This weave makes an excellent upholstery fabric. Wool is not so easy to work in this manner, for the warp must be sleyed so closely that the action of the reed tends to roughen the yarn which makes for difficulty in obtaining a clear shed.

The effect of the pattern in Mattor is exactly the same as in Crackle. The blocks do not meet at the corners, but overlap each other in the twill effect that is a distinguishing characteristic of both these two weaves. Any Crackle pattern can be transcribed to the warp face technique. The draft is not hard to write, nor is the weaving difficult. In the draft given at g, there are four warp threads in the single unit blocks, but by adding 2,

(Continued on page 17)

GO EXPLORING WITH YOUR LOOM

(Continued from page 3)

were not used, so there are long skips on the under side. My warp was a gold silk and wool mixture, set at thirty to the inch. In the coat of arms the background pattern thread is in tartan red fabri; the lettering and lions are done in an old dull gold silk and wool yarn having a burnished metallic luster; the shield is woven in the same gold as the warp, a lighter shade than that used for the lettering and lions; the stars, or mullets, to use the heraldic term, are of black silk; the Saracen head crest is woven in the same black silk with the hair band of lavender silk; the wreath beneath the head is in gold and lavender. The tabby, used throughout, is of the old gold used in the lions and lettering. The long skips of yarn underneath act as a padding which makes the pattern stand out as if it were embossed. The general effect is one of richness in texture as well as in color.

In weaving the stage coach piece I used the same treadling as I did with the coat of arms. Here the background pattern thread is of the same gold as the warp; the stage coach is of tartan red fabri, with gold and black trimmings; the dogs and one horse are black, while the second horse is bay. The tabby throughout is the same as the warp and the background. For the evening bag I used a metallic gold thread for tabby, with a richly dyed blue novelty silk yarn for the pattern.

If you have never gone exploring with your loom I hope you will do so. It is great fun.

THE WOVEN SHEAF STITCH

(Continued from page 10)

ROW 8

Under selvage—5 blocks, skip 2—(2 bl—skip 2)—8 bl—skip 2, repeat once) 2 bl—skip 2—5 bl, under selvage.

ROW 9

Under selvage, 4 blocks—(skip 3—2 bl—skip 3—6 bl, repeat once) skip 3—2 bl—skip 3—4 bl, under selvage.

ROW 10

Under selvage, 3 blocks—skip 4—(2 bl—skip 4 bl—skip 4 bl, repeat once) 2 bl—skip 4—3 bl, under selvage.

ROW 11

Repeat row 1.

Illustration 1 shows the Colonial pattern Cambridge Beauty that has been transposed for this type of weaving. The complete design as shown could be used for a tablecloth for a bridge table.

Illustrations 2 and 3 show border designs taken from the gay little "Rosebuds" pattern and "Young Lovers Knot".

Illustration 4 shows a design taken from a modern belt buckle and it could be used effectively in a border as a central figure.

Illustration 5 shows a corner for a table scarf.

Illustration 6 shows the eight harness border design that has been carefully worked out in this article.

Illustration 7 shows the eight harness Bronson weave tree design.

Illustration 8 shows a modified tree design for borders.

Illustration 9 shows a simple corner border.

Illustration 10 shows a star figure suitable for an all over design for a pillow top.

The last design illustrated takes us into the snow flake group of patterns. In the book of Snow Crystals by W. A. Bentley and W. J. Humphreys there are many exquisite pictures of photographed snow crystals. The artist, searching for patterns of graceful form and all to whom the beauties of Nature has a strong appeal will find this handsome book a source of inspiration for design. Many hundreds of forms are shown, all based on a common hexagonal pattern. While the pattern shown here is not a true hexagonal form, it is somewhat modified to meet the proportions of the Woven Sheaf Stitch, and is only the beginning of many delightful forms that can be worked out from the photographs.

HOW MANY WAYS TO WEAVE HONEYSUCKLE?

(Continued from page 16)

though as in other weaves, variations are limited only by the weaver's individual desires. The warp should cover the weft as nearly as possible. For rugs, carpet warp used two to a heddle and four to a dent on a 12 dent reed is quite satisfactory, though a 14 dent reed is better if one has a sturdy loom and an even sturdier right arm. Perleen covers quite well when used two to a dent on a 16 or 18 dent reed.

The samples shown in Illustrations I and II are intended to show detail of weave or texture. Illustration III shows the relative sizes of the different weaves on Honeysuckle pattern. All of the samples were woven on the same warp, and all used a 16 dent reed, two ends per dent.

Another six harness weave, though not illustrated here, is that weave where colored warp threads make a lengthwise border. Four harnesses carry the colored warp threads for the four blocks of the pattern; two extra harnesses carry the white warp threads for the foundation of the cloth. The effect of this weave is somewhat similar to that obtained by the simple draw-loom method that has no half tone. In the draw-loom method, the pattern is made by colored weft threads; in this six-harness method, the pattern is made by colored warp threads and must run the entire length of the woven piece. An all-over pattern can be set up in this method for especially designed patterns.

The draft for this weaving is given at h on the diagram. The colored warp threads must be soft enough to spread over the foundation cloth. Vittora Strand, if one is a careful warper and weaver, is excellent for this technique; 20/2 cotton warp and a 16 dent reed make a good combination. One colored and two white warp threads (three warp ends) must be sleyed to each dent. This warp method, if carried on to a further step to an eight-harness loom, makes possible border patterns in both warp and weft. Curtains, pillows, scarfs, and what-else can have borders at the four edges. No single weaver will ever live long enough to exhaust all the possibilities of Honeysuckle pattern in all its variations. And even if one could, it probably would be most monotonous, and sooner or later a different pattern would have to be substituted.

Perhaps those who are "fed up on Honeysuckle" will find in these suggestions, some spice to pep up their jaded appetites. However, if Honeysuckle is still despised and abhorred, even as a matter of principle, these variations can yet be applied to any of the old and familiar favorites. And some, perhaps, will respond to reincarnation even more beautifully.

GAUZE WEAVING WITHOUT HARNESSSES

By JOSEPHINE MARIE RYAN

(Formerly Instructor in Hand Weaving, Teacher's College, New York City)

SOMETIME ago as I needed new living-room curtains, I began experiments with Gauze or Leno weaving. No harness loom was available at the moment. I tried Mock Leno first but was not satisfied. I wanted the real thing—not a make-shift.

After several failures I discovered to my delight that Leno could be easily and quickly woven on a simple non-harness table loom I owned, of a type similar to the one illustrated. You may wonder why I was so anxious to work out some method of weaving gauze without the use of harnesses. It was because Leno is a most useful weave—ideal for baby things, curtains, bed jackets, boleros and scarves. It drapes well, is very light as well as porous. Incidentally, as very little thread is required, Leno is an economical way to use up the odds and ends of thread, which will accumulate.

The technique which I used is described in the Directions for weaving Scarf (A), Illustration 2.

To weave this scarf, make a warp of 88 threads of sufficient length and warp according to the following color order. Warp II Blue; II Salmon Pink; II Yellow; II Blue; II Lavender; II Salmon Pink; II Yellow; II Lavender. Altho unusual, the rainbow effect is lovely.

The warp threads are threaded through the reed or rigid heddle as follows:—

Thread the first 2 warp threads through adjoining dents as usual. Measure off $\frac{1}{8}$ inch on reed or screen and skip the dents in this space. Thread 3rd and 4th warp threads through the next two dents as before. Skip $\frac{1}{8}$ inch. Repeat threading and skipping dents, until all warp has been passed through reed. Tie up for weaving as usual, but be sure that each set of warp threads -2- are tied in front so that they run straight from reed to front roller.

Illustration I shows correct method of threading and tying up of warp. The loom illustrated has no reed used on it. The warp threads are spaced as required by means of a piece of screening, similar to fly screening. The only automatic shed needed is made by means of threading a stick through alternate warp threads and leaving it in a flat position in the warp, when not in use. For weft in Scarf A use a single Lavender thread for a distance of 10 inches; Yellow for 8 inches; Blue for 8 inches; Yellow for 8 inches; Lavender for 10 inches.

Weave (a) 1 row Tabby-weaving. Push into place. Note:—Weft thread must always lie straight across warp — be neither loose nor tight.

(b) To weave the second row:—Take a smooth, thin stick about $\frac{1}{4}$ inch wide, shaped as in Illustration I. Insert point at right end of warp, placing it over first warp thread and under second. Lift second

thread lightly with a finger or crochet hook as shown and lay over stick so that second thread will lie over first warp thread. Drop second warp thread and lift first warp thread in same manner, taking care to leave second warp thread over first warp thread. Remove stick and slip the point under first warp thread, which is still held up by crochet hook or finger of left hand.

Leave stick in place and repeat process until all warp threads have been crossed as described. Then turn stick on edge and throw weft through the opening made by it. Flatten stick and press weft into place. Remove stick from warp.

Repeat (a) and (b) alternately — one row each — until the scarf is required length.

The same technique was used in weaving Scarf B. Instead of leaving a space of $\frac{1}{8}$ inch between each set of two warp threads unthreaded however, the space was $\frac{1}{4}$ inch.

Although this scarf may impress some as impractical, because of the large open spaces between warp sets of threads, I have worn it for some time folded in half and have found it surprisingly durable as well as comfortable in milder weather when a scarf is needed more for ornament than warmth.

Sampler C (Illustration 2) shows what can be done by varying the Leno weave.

The warp was entered as for Scarf A. Snowflake and Boucle were used both for warp and weft. This combination makes lovely baby throws, jackets and scarves. The three different variations are described separately.

Section R consists of Tabby Weaving:—Boucle used for weft for 4 Rows; Snowflake for 4 Rows; Boucle for 4 Rows.

Section S is woven in the gauze weave used for Scarf A. With Snowflake as weft, weave 3 Rows; then 1 row with Boucle; 3 Rows with Snowflake.

Section P. To weave, 2 warp threads are picked up together, instead of one only as in Scarf A and brought over 2 warp threads.

Weave 1 row with Snowflake; 1 row with Boucle; 1 row with Snowflake.

Many other combinations will occur to anyone who tries this weave and if these directions are followed exactly, the weaving of Leno should be easily mastered.

A fabric consisting of alternate stripes of Tabby and Leno weaving can be woven by threading warp as seen in Illustration I. Sections of warp are threaded closely at intervals throughout the warp and for these sections the warp threads are picked up as for Tabby weaving for all rows instead of being twisted. Gauze sections are picked up as usual.

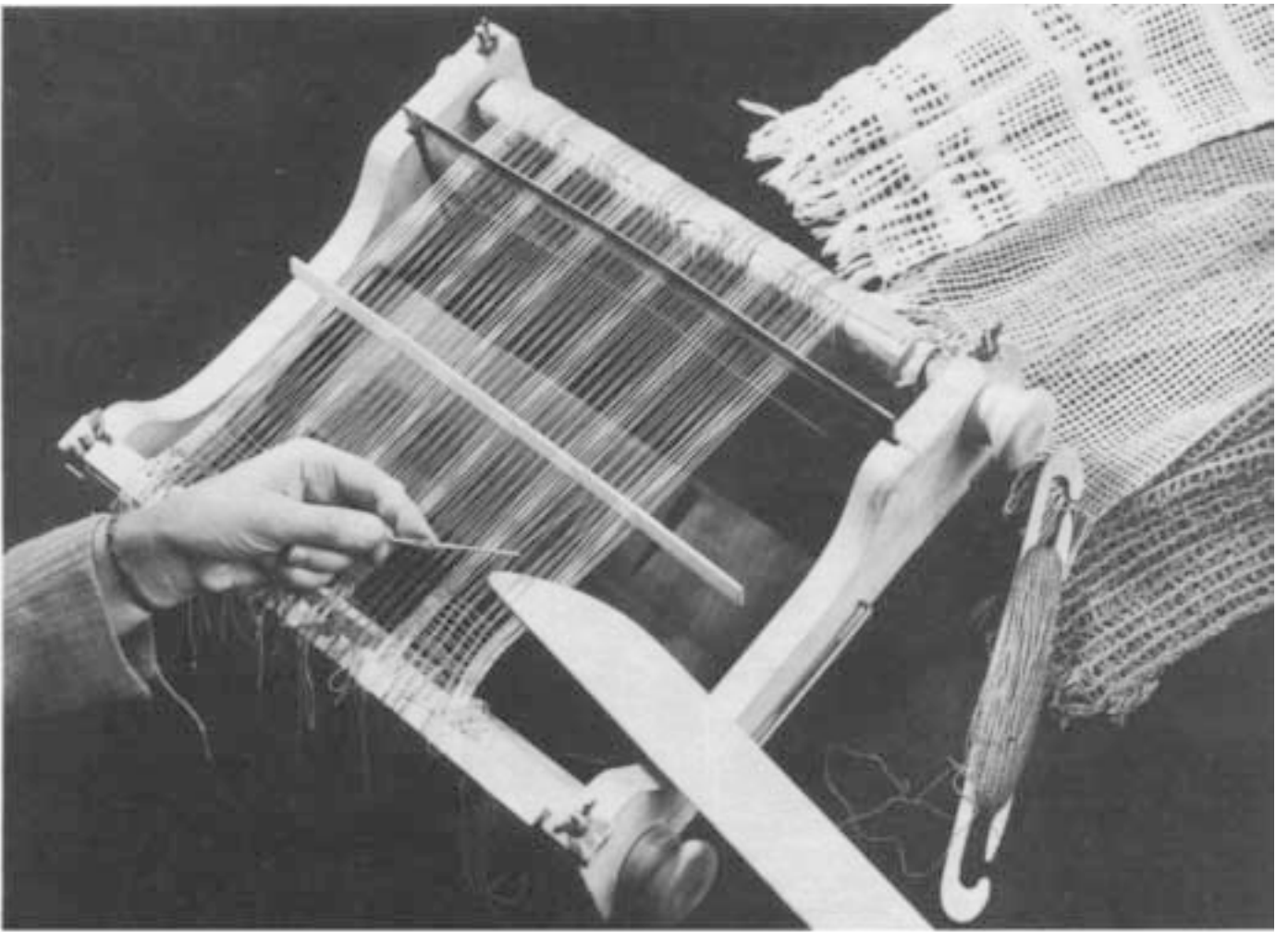


ILLUSTRATION I

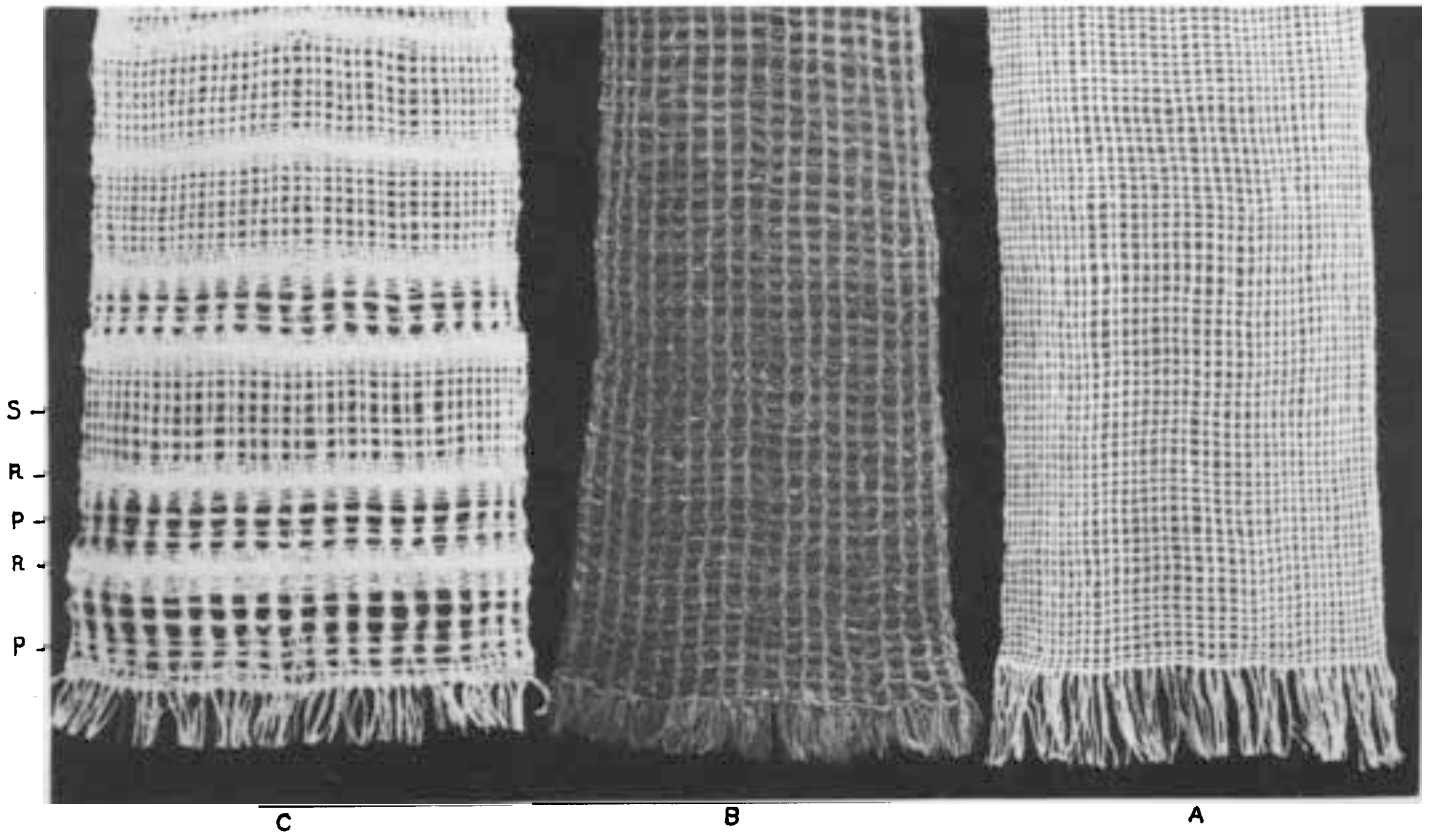


ILLUSTRATION III

QUESTIONS AND ANSWERS By MARY M. ATWATER

Question: "What is meant by 'tie-up'?"

Question: "How can I transpose written treading directions to fit the tie-up of my loom"

Answers: The above two questions come to me so frequently that I am led to believe many weavers find the matter of tie-up confusing. By "tie-up" we mean the manner in which the treadles are connected with the harnesses to open the sheds. In table-loom, which have no treadles, the connection is built into the loom, each lever raising a single harness. In four-harness treadle looms equipped with only four treadles each treadle sinks a single harness, and the tie-up is ordinarily made as shown on the diagram at No. 1 and No. 2. We call the treadle that sinks the front harness "treadle 1"—if we call the front harness "harness No. 1," as is the usual American custom. However, if we call the back harness "harness No. 1" the treadle that sinks this harness will be "treadle No. 1."

Four-harness looms, however, are often provided with six treadles—and in my opinion all should be, as the six-treadle tie-up makes weaving easier and quicker. The reason for the six treadles is that in four harnesses we have six balanced sheds—two harnesses up and two down—on which most four-harness weaving is done. By tying a treadle to sink two harnesses at a time we can open the shed with a single treadle. The sheds may be tied in any order, according to the fancy of the weaver. The six-treadle tie-up at No. 3 is the "standard" tie-up I use for all my own four-harness work, and it is in quite general use by American weavers. In this tie-up the four pattern sheds are on the left and the two tabby sheds on the right, lettered A and B, to distinguish them from the pattern sheds. Tie-up No. 4 on the diagram is an arrangement used by some weavers. The difference is merely one of personal choice.

It will be obvious from a study of the drafts that treadle 1 of tie-up No. 3 sinks the two front harnesses, and that to make this 1-2 shed on tie-up No. 1 or No. 2, treadles 1 and 2 must be used together. Similarly for the shed made by treadle 2, tie-up No. 3,—the 2-3 shed—treadles 2 and 3 must be used together on tie-ups No. 1 and No. 2.

Therefore, if you are using a loom with four treadles and wish to follow treading directions written for the six-treadle tie-up transpose as follows:

For "treadle 1" — use treadles 1 and 2				
" "treadle 2" " " 2 " 3				
" "treadle 3" " " 3 " 4				
" "treadle 4" " " 1 " 4				
" "tabby A" " " 2 " 4				
" "tabby B" " " 1 " 3				

As a table loom operates by raising instead of sinking the harnesses the transposition must be made to opposites, or the weaving will be wrong side up on the loom. Therefore on a table loom transpose this way:

For "treadle 1" — use levers 3 and 4				
" "treadle 2" " " 1 " 4				
" "treadle 3" " " 1 " 2				
" "treadle 4" " " 2 " 3				
" "tabby A" " " 1 " 3				
" "tabby B" " " 2 " 4				

On a treadle loom of the "jack" type, like the Bernat treadle loom, which operates by raising the harnesses make the tie-up to six treadles as shown on the diagram at No. 5. This produces exactly the same sheds as tie-up No. 3, and in weaving no transposing is necessary.

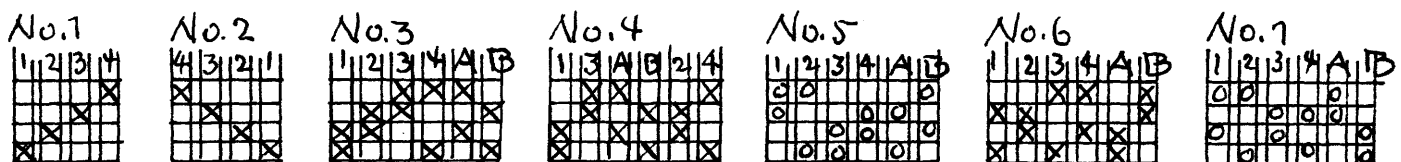
Tie-up No. 6 is the six-treadle tie-up for the summer and winter weave. It will be noted that the sheds are the same as in tie-up No. 3, but they are differently arranged to suit the weave and to keep the four pattern sheds on the left and the two tabby sheds on the right. Tie-up No. 7 is the same arrangement of sheds, tied as for a jack loom.

It will be noted that sinking ties are indicated on the drafts by "X" and raising ties by "O".

To transpose tie-up No. 6 to weave on a loom tied as at No. 1 or No. 2, proceed as follows:

<i>Four-treadle Loom</i>	<i>Table Loom</i>
For "1", treadles 1-3	For "1", levers 2-4
" "2" " 2-3	" "2" " 1-4
" "3" " 1-4	" "3" " 2-3
" "4" " 2-4	" "4" " 1-3
" "A" " 1-2	" "A" " 3-4
" "B" " 3-4	" "B" " 1-3

Of course if you number your harnesses from back to front in the Swedish manner, all this should be reversed, and the tie-up and any transpositions should be made accordingly.



Four-Harness Tie-Ups

(DIAGRAM)

AGAIN THE TWILL WEAVE

By MARY M. ATWATER

IN a recent article in the *WEAVER* an attempt was made to give an idea of the important place in weaving held by the twill weave, and a number of twill patterns were given and illustrated. Of course in such an article it was impossible to do more than skim the surface of what is a very large subject, and it seemed desirable to give further twill patterns and directions.

For the information of those who may have missed the first article may I repeat that twill is undoubtedly the most important of all the many different weaves we use—the most important because of its many uses and because of its wide variety. It belongs in the class of weaves I have termed the “50-50” weaves—those weaves in which warp and weft are the same material or materials the same in grist, and woven with the same number of weft-shots to the inch as there are warpendes to the inch in the reed. The “50-50” weaves as a group are the weaves best adapted to the weaving of all-wool or all-linen fabrics.

We have seen that a “tweed” is a twill fabric woven of homespun or handspun wool (single-twist) yarns,—usually in the plain 2-2 twill or the 2-2 herringbone or “dornik” pattern. We have considered the 3-1 and 1-3 twills, broken twill, the three-harness “jeans” twill, and the double-faced twills. The twill patterns shown with this article are the less-well known “fancy” twills—a selection, of course, as there are many hundreds of these patterns.

In making the selection I have been guided only by my own taste, and by practical considerations. The weaves that seemed to me too open to make a satisfactory fabric I have not included. And I have limited my selections to the four-harness and the eight-harness twill. There are, of course, many beautiful and interesting six-harness, seven-harness, nine-harness and ten-harness twills. But it was impossible to include everything and the four-harness and eight-harness patterns appeared to me to be the most practical and interesting groups.

Of the four-harness patterns illustrated No. 2 is the most loosely woven, and if a very heavy, soft fabric is desired this weave will be the one to select, but from the point of view of durability and wearing qualities, any of the other patterns is more desirable.

Pattern No. 1 I like particularly. The wrong side of this weave is different from the right side, and by

some might be preferred. The effect is similar to that of No. 6. The fabric is very firm and smooth. It might be noted that any pattern that includes the two tabby sheds—Nos. 3, 4, 6, 7, 8, 9 and 13—will be particularly firm and close.

Any of these four-harness patterns are suitable for suitings, coat-fabrics, blankets, scarves and so on. No. 3 and No. 9 are similar. No. 11 and No. 12 are also similar, though quite different in effect. No. 7 and No. 10 are very unusual and would, I believe, make very attractive fabrics for top-coats.

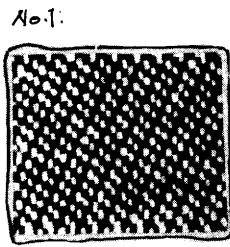
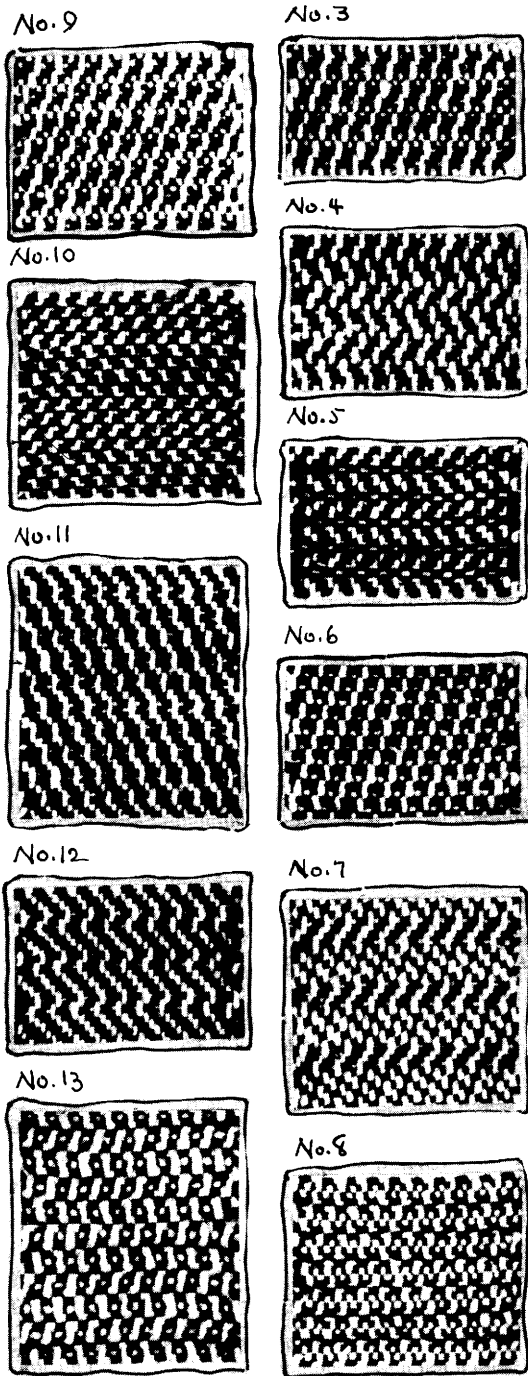
It should be noted that for the patterns with a diagonal movement, all one way, the slant of the twill may be reversed by reversing the order of treadling.

There are, of course, a great many four-harness twills that for lack of space could not be included here, but perhaps these samples will give an idea of the possibilities. There are many times as many eight-harness patterns as there are four-harness patterns, of course, and more open and more elaborate textures are possible on eight harnesses.

Some of the eight-harness twills I have included seem to me too open for dress-fabrics, but they will be found excellent for baby-blankets, afghans, and similar articles. Many of the weaves shown are close weaves, suitable for clothing. Choice of pattern is, of course, a matter of taste, but I know that if ever I have time to weave myself the fabric for a coat, the weave I shall select is the one shown at No. 2, Diagram II. This has, for me, a wholly delightful texture and effect. No. 4 is also an excellent weave for such a purpose, and No. 6, No. 8, No. 11 and No. 12 are excellent for sporty top-coats. No. 1, No. 5, No. 7, No. 9 and No. 14 are particularly nice for blankets as they are quite open weaves and make soft, heavy fabrics.

Some of these patterns are the same on both sides of the fabric; for instance No. 1, No. 3, No. 5, No. 7, No. 11, No. 14. Others are similar but not exactly the same, as for instance No. 2 in which the wrong side shows the main figure in the light color of the warp against a similar background texture. Others are equally interesting though different on the two sides, while in a few the wrong side is not interesting at all. But in the main I have avoided patterns that are poor on the wrong side as in my opinion this is a disadvantage.

I. Four-Harness Twills

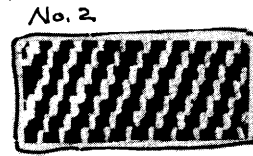
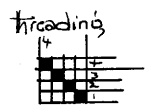


tie-up No. 2

1	2	3	4	5	6	7	8
X	O	X	O	X	O	X	O
O	X	O	X	O	X	O	X
X	O	X	O	X	O	X	O
O	X	O	X	O	X	O	X
X	O	X	O	X	O	X	O
O	X	O	X	O	X	O	X
X	O	X	O	X	O	X	O

tie-up No. 1

1	2	3	4	A	B
O	X	O	X	O	X
X	O	X	O	X	O
O	X	O	X	O	X
X	O	X	O	X	O
O	X	O	X	O	X
X	O	X	O	X	O
O	X	O	X	O	X



tie-up No. 3

1	2	3	4	A	B
X	O	X	O	X	O
O	X	O	X	O	X
X	O	X	O	X	O
O	X	O	X	O	X
X	O	X	O	X	O
O	X	O	X	O	X
X	O	X	O	X	O

In the above tie-up drafts the sinking ties are indicated by "X" and the raising ties by "O". On a counterbalanced loom tie the Xs and on a loom of the "Jack" type, like the Bernal loom tie the Os.

Weave No. 1. Treadles 4, A, 3, B, 2, A, 1, B, Repeat. (tie-up No. 1)
 Variation, (not illustrated) treadles: 1, A, 2, B, 3, 1, B, 4, A, 3
 Repeat

(weave all patterns with one shot on each treadle)

Weave No. 2. (tie-up No. 2) Treadles 1, 2, 3, 4, 5, 6, 7, 8, Repeat

" No. 3. (tie-up No. 1) A, 3, 2, 1, B, A, 1, 4, 3, B, Repeat

" No. 4. (tie-up No. 1) B, 3, 2, 1, A, 3, 4, 1, Repeat

" No. 5. (tie-up No. 1) 3, 2, 1, 3, 1, 2, 3, 1, Repeat

" No. 6. (tie-up No. 3) 1, A, 2, B, 3, A, 4, B, Repeat

" No. 7. (tie-up No. 1) 4, A, 3, B, 2, A, 1, 4, 3, 2, A, 1, B, 4, A
 3, 2, 1, Repeat

" No. 8. (tie-up No. 1) 3, A, B, 3, 1, B, A, 1, Repeat

" No. 9. (tie-up No. 1) A, 3, 2, B, A, 1, 4, B "

" No. 10. (tie-up No. 1) 1, 2, 4, 1, 3, 4, 2, 3, 1, 4, 2, 1, 3, 2, 4, 3, Repeat

" No. 11. (tie-up No. 1) 1, 2, 3, 4, 3, 4, 1, 2

" No. 12. (tie-up No. 1) 1, 2, 3, 4, 1, 4, 3, 4, 1, 2, 3, 2.
 Repeat

" No. 13. (tie-up No. 1) 2, B, 1, 3, B, 4, Repeat

No. 14. —not illustrated— (tie-up No. 1) 3, A, B, 1, Repeat

No. 15 " " (tie-up No. 1) 1, 3, B, 3, A, 3, 1, B, 1, A, Repeat.

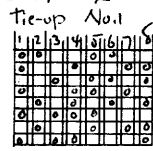
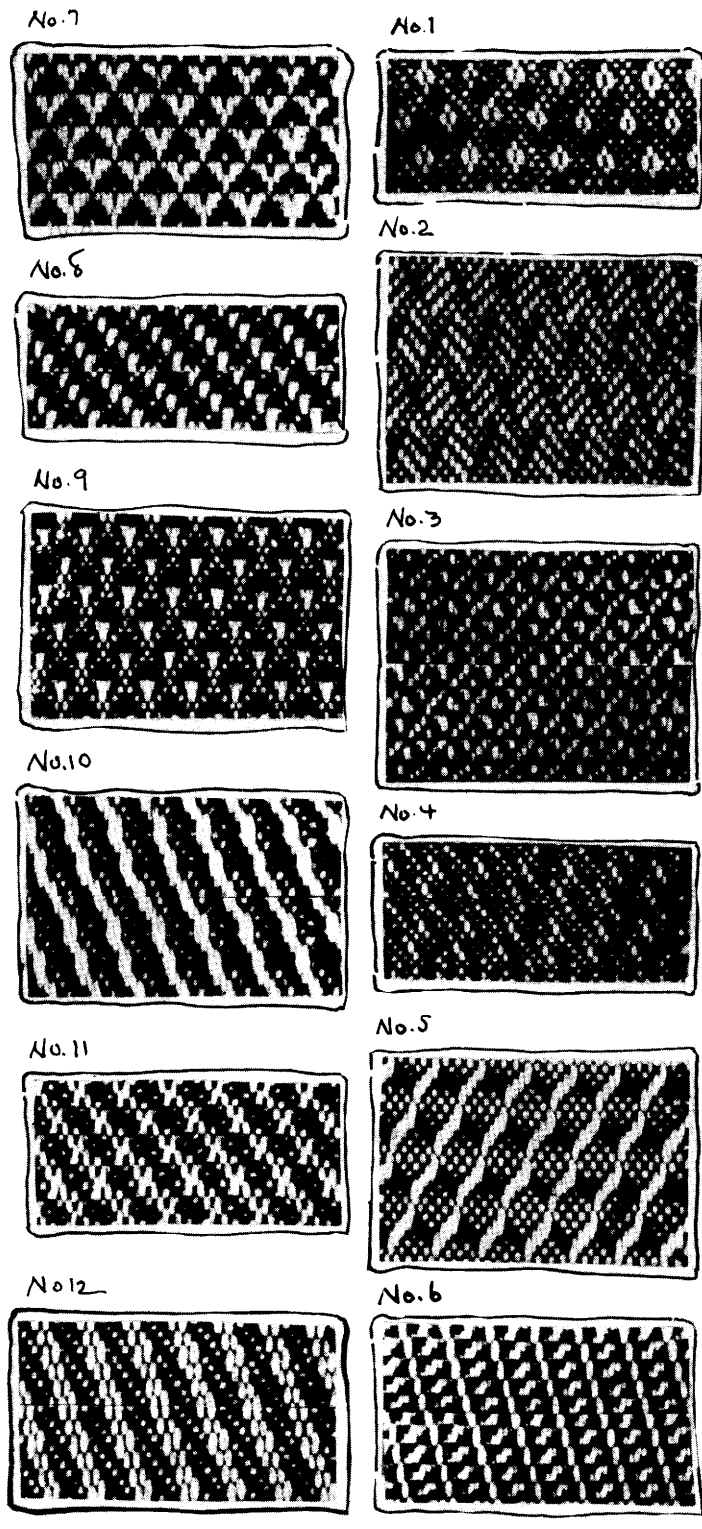
DIAGRAM I .

About the tie-ups as given: For the four-harness weaves I have included three tie-ups. Of these No. 1 is the regular "standard" six-treadle tie-up used on most four-harness looms. Some of our looms are of the "counterbalanced" type, with the harnesses hung on over rollers or pulleys. In such looms the sheds are made by sinking certain harnesses for each shed, and the tie-up is made with the sinking ties, indicated on the drafts by "X". But in recent years the "Jack" type of loom has come more and more into use, not only for eight-harness looms but also

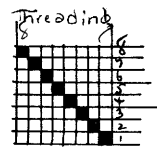
for four-harness weaving. In these looms—among which are the Bernal treadle looms—the shed is made by raising certain harnesses for each shed and the tie-up should be made with raising ties. These are indicated on the drafts by "O".

For the eight-harness patterns I have written all the tie-ups as for the rising shed, as very few counterbalanced eight-harness looms are in use. If, however, one has such a loom the blank spaces of the tie-up drafts should be tied to sink.

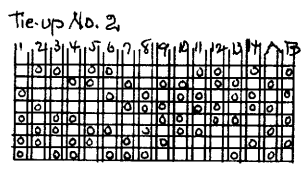
II, Eight-Harness Twills



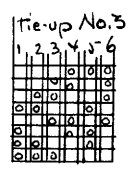
(these tie-ups are all written as for the rising shed.)



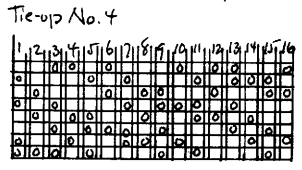
Weave: 1, 2, 3, 2, 4, 5, 4, 6
7, 6, 1, 8, Repeat



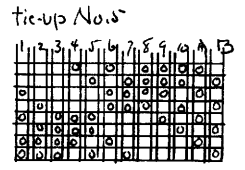
Weave: A, 1, 2, 3, 4, 5, 6, 7,
B, 8, 9, 10, 11, 12, 13, 14
Repeat



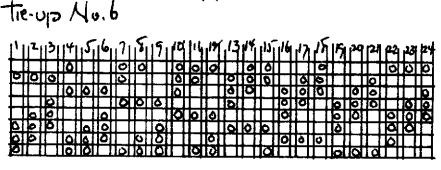
Weave: 1, 2, 3, 4, 5, 6
Repeat



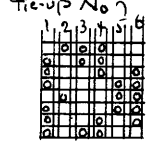
Weave: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11
12, 13, 14, 15, 16
Repeat



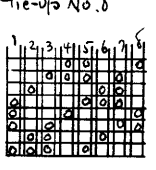
Weave: B, 1, 2, 3, 4, 5, A
B, 6, 7, 8, 9, 10, A
Repeat



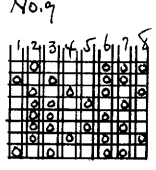
Weave: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15,
16, 17, 18, 19, 20, 21, 22, 23, 24
Repeat



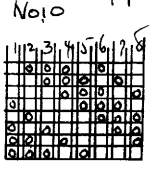
Weave: 1, 2,
3, 4, 1, 2, 5, 6
Repeat



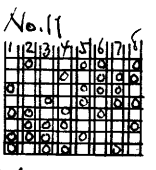
Weave: 1, 2, 3, 4, 5, 6, 7, 8
Repeat



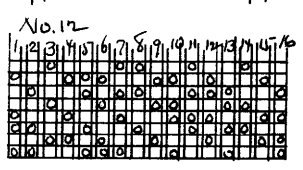
Weave: 1, 2, 3, 4, 5, 6, 7, 8
Repeat



Weave: 1, 2, 3, 4, 5, 6, 7, 8
7, 8, 1, 2, Repeat



Weave: 1, 2, 3, 4, 5, 6, 7, 8
Repeat



Weave: 1, 2, 3, 4, 5, 6, 7, 8, 9,
10, 11, 12, 13, 14, 15, 16,
Repeat

DIAGRAM II

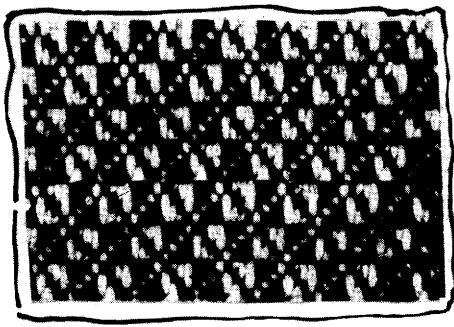
It will be noted that pattern No. 6 requires 24 changes of shed. As eight-harness looms are rarely if ever equipped with this number of treadles this pattern could be woven only on a loom built with a "dobby" or with a system of draw-cords, or on one of the looms with two treadles and a selector, which appear to be coming into rather general use.

The tabby sheds may, of course, be woven on any twill threading except on those with an uneven number of harnesses. I have not shown the tabby treadles on the tie-ups except for the patterns that include these two sheds as part of the weave.

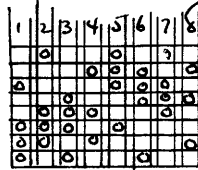
All the patterns shown are woven on the plain

III Additional Eight-Harness Twills.

No. 14

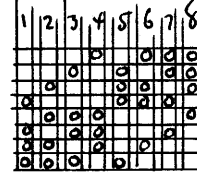


No. 13



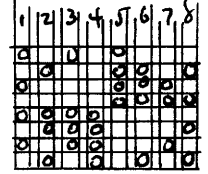
Weave
1.2.3.4.5.6.7.8
Repeat

No. 14



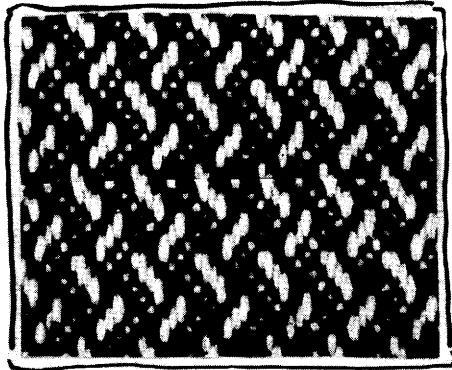
Weave
1.2.3.4.5.6.7.8
Repeat

No. 15

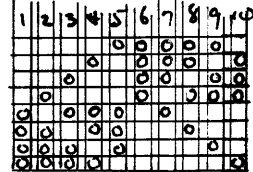


Weave:
1.2.3.4.5.6.7.8
Repeat

No. 13

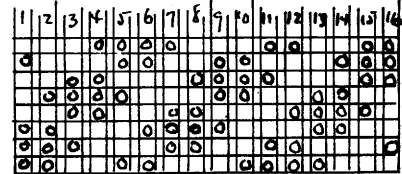


No. 16



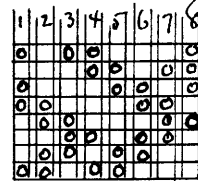
Weave: 1.2.3.4.5.1,
6.7.8.9.10.6.
Repeat

No. 17



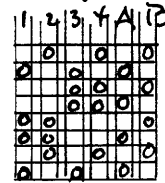
Weave: 1.2.3.4.5.6.7.8.9.10,
11.12.13.14.15.16.
Repeat

No. 18



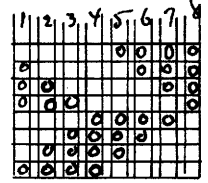
Weave:
1.2.3.4.5.6.7.8.
Repeat

No. 19



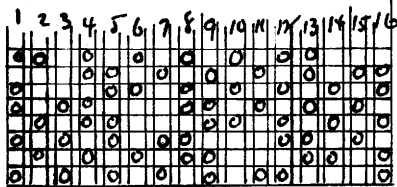
Weave:
1.2.3.4.A.B.A.B
Repeat

No. 20



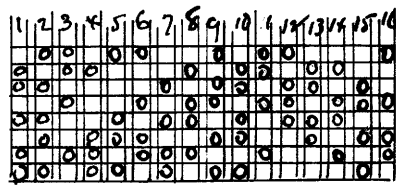
Weave:
1.2.3.4.5.6.7.8
Repeat

No. 21



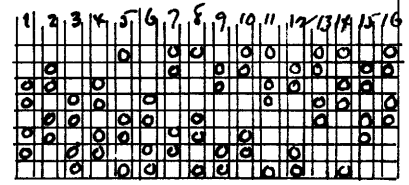
Weave: 1.2.3.4.5.6.7.8.9.10.11,
12.13.14.15.16.
Repeat

No. 22



Weave: 1.2.3.4.5.6.7.8.9.10
11.12.13.14.15.16.
Repeat

No. 23



Weave: 1.2.3.4.5.6.7.8.9.
10.11.12.13.14.15.16.
Repeat

Patterns No. 15 - No. 23 are not illustrated

DIAGRAM III

twill threading, on a warp all of one color, with weft in a similar material in a contrasting color. Of course the stronger the contrast in color the bolder the pattern effect. A simple effect of texture can be produced by using warp and weft of the same color.

In a later article in this series it is proposed to consider some variations in the twill threading—the

herringbone and "dornik" weaves, certain "fancy" twill threadings and arrangements that depend for their effect on using several colors in both warp and weft. A few of the latter were, as may be recalled, shown in the first article of this series. It is not the intention to produce an exhaustive study of the twill weave but merely to give weavers some practical suggestions on the use of this our most valuable weave.

GIVE LIFE TO YOUR EXHIBIT

By ELIZABETH ROBERTS

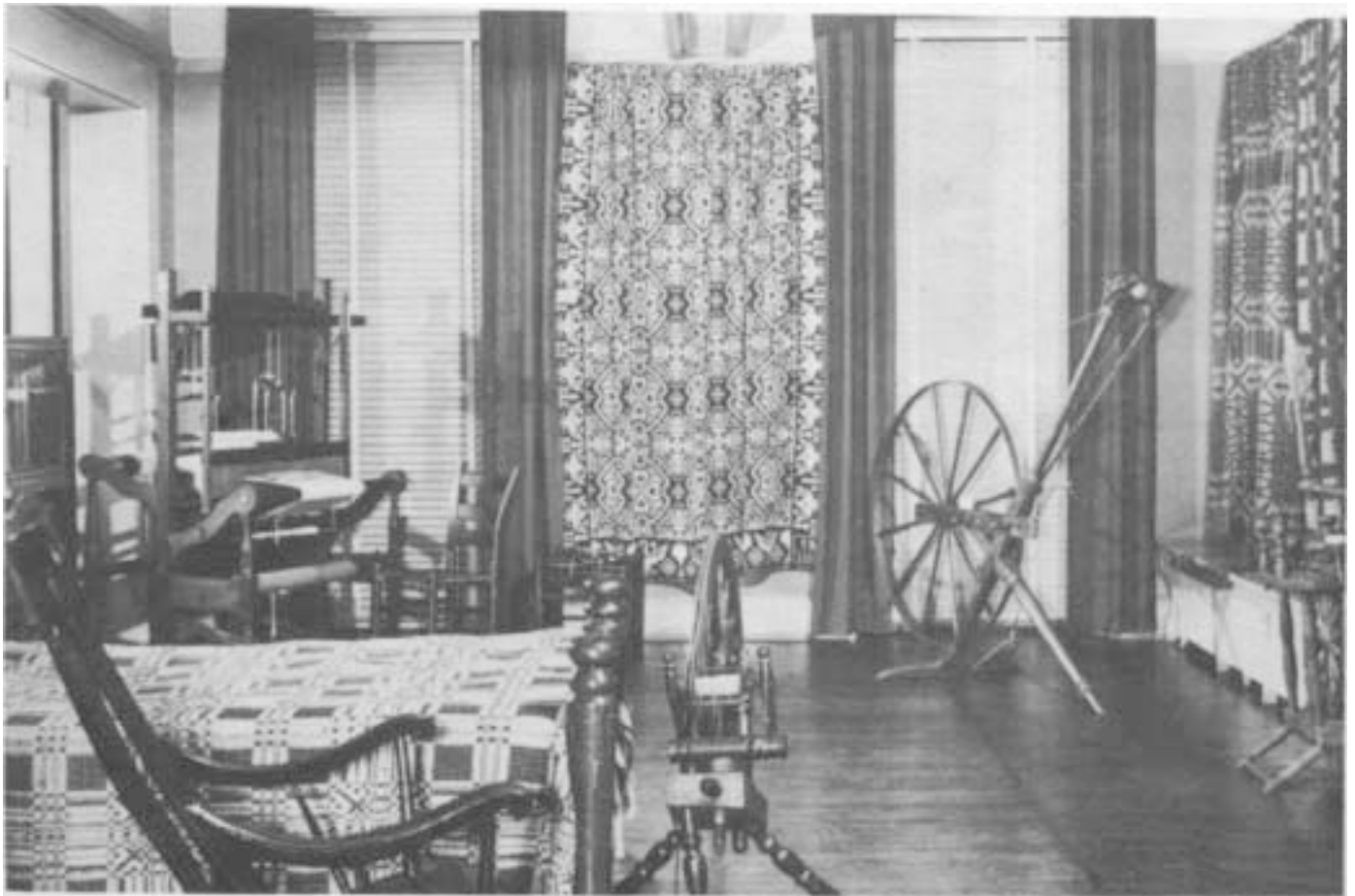
IN viewing various weaving exhibits I often feel that I would like to take the articles out of their orderly arrangement in the show cases and place them in a proper setting such as they would have in a home. To me a piece of hand-woven material is too vibrant and individual in its character to be imprisoned behind cold, impersonal glass. It demands surroundings in keeping with its live personality, and nothing, I think, can supply a more completely satisfying background than the fine old pieces of furniture which have come down to us from the period when the loom and the spinning wheel were necessary mechanisms in the home. There is, for instance, perfect harmony between an old four-poster bed and a hand-woven coverlet, or between great-great-grandmother's mahogany table and a hand-woven runner. It is with this thought in mind that my pupils and I arrange our annual display in the galleries of our local Art Association (under whose auspices our classes are conducted). From our own homes and from those of our friends we assemble the choice old pieces of furniture which are to form the framework of our exhibit and, so far as possible, place each hand woven article in its appropriate setting.

In the accompanying photographs are two taken in the main gallery where the weaving of the class was displayed. My pupils are at present interested in making articles for their homes and the pieces

to be displayed fell naturally into three groupings,—living room, dining room and bed room furnishings. The upholstery on all the chairs was woven in class. To display a handsome pair of window drapes in the dining room group a window was borrowed from the drapery department of a local store and the effect enlivened by a floral wall paper panel which gave the appearance of a garden vista. I am sure all weavers will recognize the different patterns which were used. I am sorry the pictures must be in black and white for we all felt that the exhibit gave a pleasant effect in color harmony.

The third picture was taken in an adjoining gallery where we had arranged an exhibit of coverlets woven over a century ago. This proved of great interest to most of our visitors, many of whom found coverlets similar to ones which they had stored away, woven by a great grandmother or grand aunt, who, it was usually proudly said, had also spun and dyed the yarn. As a result of this exhibit many of these old coverlets will, I believe, be brought out of their moth-ball seclusion and given again a place of honor in the home.

To those who are weaving commercially I would suggest this method of exhibiting as one which is likely to bring results. I used it several years ago while supervising a "cottage" weaving industry among a group of foreign women and our largest orders came as a result.





A WEAVER'S TRIP TO PERU

By NELLIE SARGENT JOHNSON

(Instructor in Weaving, Wayne University, Detroit, Mich.)

EDITOR'S NOTE:—This article is based on the personal experiences of the author in Peru during the summer of 1939. All of the photos were taken by herself, and are of textiles which are in her own collection which she brought home from Peru. She has some over 200 of these ancient fabrics, including a loom illustrated in this article, and also a spinning basket with its full equipment of spindles, cotton on ancient distaffs, and a tool made out of a piece of bone which was used to beat down weft threads.

AS most of you know, ancient Peruvian textiles are among the most beautiful in the world and noted not only for the fineness of their execution and the thread, but also for the great variety and kinds of weaving technique which were employed to create them.

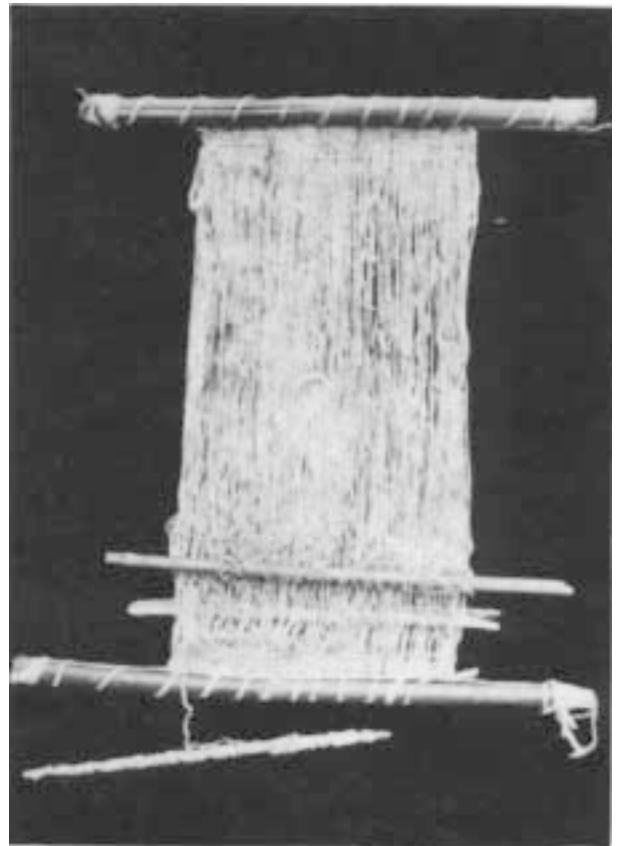
This summer of 1939, it has been my good fortune to spend my vacation in Peru and to have access to many of the wonderful textiles in the museums in Lima in order to study them in detail. And also I have brought home a most interesting collection of my own, both ancient Incan and modern Indian ones. It is not possible in writing to describe for you the real spirit of modern Peru. I wish that it were. One really has to see it and feel it to know what it is. The greater part of my time was spent in and near Lima, except for a four day trip up into the mountains. This took us up over the Sierras at Galera over 17,000 feet, and then down to the town of Huan-cayo which is 12,800 feet above the sea level. It was a wonderful experience. For we not only had an opportunity to see and study the people and city of Lima, but also saw how the modern Indians of the mountains live.

Lima is a beautiful city with many strange contrasts. One sees an old Incan mound of huge stone or adobe blocks partly unearthed, and right next to this an ultra modern cement home of the latest design. Or perhaps an Indian hut of adobe mud with a thatched straw roof was next to a stately old Colonial Spanish home with its open patio, lovely tiles and iron grille work. There were many parks and wide boulevards and of course a great many old Colonial Spanish churches and convents. What was of especial interest to me were the fine archeological museums and their collections of textiles. Here one can spend much time in study and real research.

It was winter in Peru, we wore our heavy clothes in the middle of July. But the climate is very mild with only an occasional damp mist, but never a real rain or any snow.

One sunny afternoon we took a trip by auto to Pachacamac, a typical Pre-Incan burying ground about 12 miles outside of the city of Lima. Here were the ruins of the ancient town of Pachacamac we actually drove through one of its narrow ancient streets, and high up on the hill above the town the old Pre-Incan temple to Pachacamac, the creator god. While still higher on the same hill was the Incan temple of the Sun. Across the sand dunes in the valley below was also the ruins of the House of

the Virgins of the Sun, where much weaving was done for the use of the priests, the Inca, and for the temple. All of these ruins have been excavated enough to show the real size, construction, and plan of the buildings. Much of this work was done in the fall of 1938, under the direction of Dr. Albert Giesecke, who was appointed to carry on by the Peruvian government in preparation for the visitors to the Lima Conference in December of 1938. We were particularly fortunate in having Dr. Giesecke, who by the way is an American, personally conduct us through the ruins, and explain them to us. Many of the old colored paintings on the walls of the



Ancient Peruvian Loom from a Grave

Pachacamac temple have been uncovered. Fish, bird, and corn motifs are very clear and bright in yellow, blue, and a coppery red and black. Right in front at the base of the temple of Pachacamac some of the most interesting mummies have been found. Dr. Giesecke also said that they believed they had found, during the excavating, the original carved wooden idol which stood in the shrine of the Pachacamac temple, which was thrown out by the Spanish conquerors to be replaced by the cross. This idol we saw later at the National Archeological Museum in Lima. It is a very simple crudely carved wooden pole about 6" in diameter and possibly about 6 feet in length.

This idol resembles the Alaskan totem poles somewhat, and was held most sacred. Only the priests and the Inca himself were allowed to approach it, and then only after a long series of religious fasts and sacrifices had been performed in preparation for the event. Near the shrine on which the idol stood was the sacrificial stone, even now discolored by the blood of many animals, and possibly of humans as well. Here at Pachacamac it is possible to pick up fragments of cloth, pottery, skulls, bones etc. I found many things of interest to the weaver, among these a complete dark brown wool poncho in plain weave with a striped border

the warp threads, and the flat stick for the opposite shed. It seems almost unbelievable that all of the beautiful fine fabrics of these ancient people were woven on a loom no more complicated than this. One narrow tapestry ribbon which I have has 80 warp threads to the inch, and 320 weft threads of very fine wool to the inch. It is my contention that more people today would learn how to weave if it were not for the expense involved in buying a large loom. Certainly much more can be done with such simple equipment than is being done, although to use this loom well does require more skill and patience on the part of the weaver. A description of this type of loom was given in detail in "Handweaving News"



Peruvian Brocade with Tapestry Woven Fringe



Three Double Woven Peruvian Fabrics

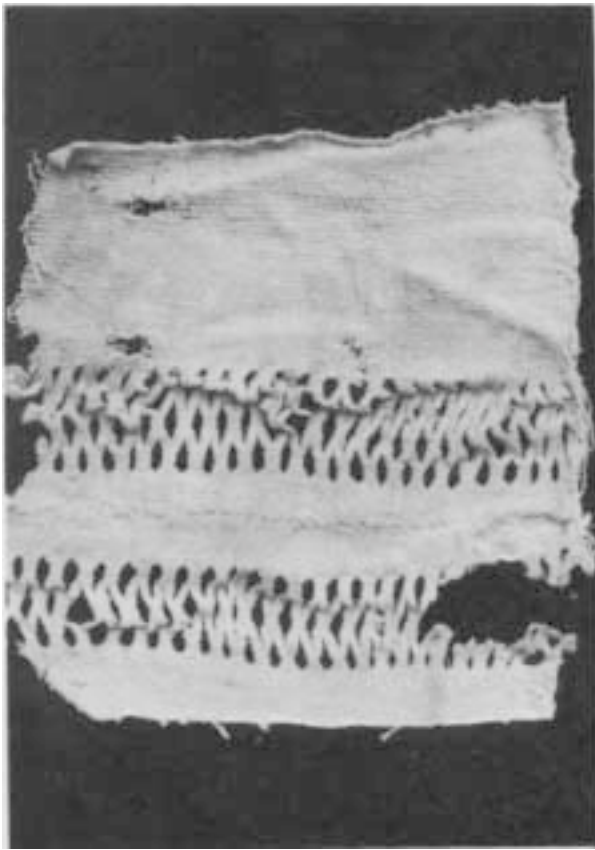
on each edge, quite a number of pieces of plain fabric in which mummies were wrapped, bunches of cotton with the seeds still in them, bits of colored pottery, shells etc. There is still a very large area at Pachacamac which has not been excavated at all. No one knows the wonderful discoveries which are waiting there still covered with the ever drifting sands.

At Figure No. 1 is shown a Peruvian loom. This is an ancient one which came from a mummy bundle. It is similar in construction to the loom of the Navajo Indian of today, except that most of these old looms weave only a very narrow width. This one weaves about 7" wide, and has a few rows of plain weave started at the top as well as at the bottom where the shuttle stick is. It also has the heddle rod still in position with a fine thread on it around

for July of 1936. This is a weaving service sent out each month by the author of this article.

At Figure No. 2 is shown a simple brocade pattern of interlocked puma heads in bands. The background cloth is a very firm close weave of cotton, with the brocade thread of wool spun a bit coarser than the plain weft. At the bottom of this piece is a red tapestry woven fringe which was woven separately and sewed on. Many of the Peruvian weavings have this type of woven fringe. This brocade is about 10" in width with the bands about 2" wide.

Double weavings seem to have been a rather common form among these ancient people, for there are many cloths woven in this technique. At Figure No. 3 are three different pieces. The square piece at the left top is of brown and white cotton and 10" square. It is a complete piece with selvage on all sides. Note



A Variation of Tapestry Technique



A Tapestry Woven Gauze Fabric

especially on this piece that the figures on the extreme left are very indistinct. This might have been due to the fact that these last weft threads were darned in with the needle. It is possible that such a piece was used as a handkerchief, for I have a number of these in my collection. The large piece of double weaving at the right is an interesting combination of the bird and fish motif, and has an attractive border at the top. It was part of a large mantas, and I have several pieces of this same pattern. The small piece at the bottom left of Figure No. 3 is of very fine thread and also an interlocked fish and bird design of brown and white. It is possible to do double weaving on the four harness loom, and for those who are interested in learning how, I will refer you to "Lesson on How To Do Double Weaving on the Four Harness Loom" by the author of this article. This lesson is described in simple clear directions and includes the loan of a sample of the weave. Since March of 1934, when directions for this technique were published for the first time in the English language in the above mentioned "Lesson", many weavers have availed themselves of the opportunity to learn how to do it. For it is not difficult, and any design which can be drawn out on cross section paper may be woven.

At Figure No. 4 is a small fragment of coarse cotton. This is woven in a variation of the tapestry technique where the slits are made to form the pattern, a more or less rare form of tapestry weaving.

At Figure No. 5 is a tapestry woven gauze. It is woven of cotton all white. The bottom border with its little fringed edge is four and three fourths inches wide and is sewed to a piece which was 19" wide when it was woven. The interlocked bird design is woven on the gauze background with thread somewhat coarser than the background warp and weft. A description of this technique may be found in "Handweaving News" for October 1939, and will not be repeated here for lack of space.

It is the hope of the author that this brief description of a few of her Peruvian textiles and the places where they were found will be of interest to other weavers. For there is much to be done to make them better known, and our own weaving can be greatly improved through a study of what ancient peoples accomplished with simple looms and simple designs. One weaving student who recently saw these textiles said, "It just makes our modern weaving look like nothing at all, doesn't it." And so we marvel at the fineness, ingenuity, and skill with which these ancient fabrics were woven.

THE SEATTLE WEAVERS GUILD

By DORIS L. HENDERSON



Mrs. P. Willis Holden, president of the Seattle Weavers' Guild holds one of the curtains she has made for her beach cabin. Others, and the covers for daybed, bunk, and pillows are displayed on the stage at the recent exhibit sponsored by the Seattle Guild.

THE SEATTLE WEAVERS' GUILD, which now numbers more than seventy enthusiastic members, is the growing result of the desire of a handful of women to create widespread interest in weaving as a handcraft and to bring Seattle weavers together as a group for their mutual benefit. Three years ago these women — seven or eight of them —

meeting together at irregular intervals at each other's homes to discuss their weaving problems and to develop new techniques, thoroughly enjoying every minute of the time spent, decided to extend their activities to include, if possible, all weavers — beginners and experienced alike — and invitations to an introductory meeting were issued.

The interest evinced at that meeting has continued to grow and the enthusiasm of the sponsors is reflected many times as the membership increases.

The Guild has a president, vice-president, secretary and treasurer, and while the meetings which are held once a month are generally rather informal, there is a definite purpose to each one. A program chairman arranges the program for the day and endeavors to provide a speaker or a feature of particular interest to weavers. Alternate meetings are open and members are privileged to bring guests. Every other meeting is open to members only and at that time any business that may be pending is taken care of. Members bring articles they have woven and a committee hangs them for display. It is this feature that the members consider most valuable for, as they view the articles, they are free to discuss with each other the patterns, the types of threads in warp and weft, and the reed used. Ideas and information are shared gladly and in this the Guild is considered unique.

While some of the Guild members have only recently begun to weave, there are many with years of experience, a few having learned as children in their native lands across the ocean. The Guild is particularly fortunate in having included in its membership Miss Grace Denny, Professor of Home Economics at the University of Washington and Miss Mary Elizabeth Starr, Instructor in Home Economics (including weaving) at the University of Washington. Through them Guild members have been furnished much interesting and valuable history and information about textiles and their weaving.

In May, 1938 The Seattle Weavers' Guild sponsored its first weaving exhibit in the auditorium of Rhodes Department Store. Exhibits were not restricted to Guild members and invitations were sent to weavers in other Washington cities as well as to weavers in Oregon, Idaho and British Columbia. The response was staggering, even to the most enthusiastic, and a beautiful display was the result. Every type of woven articles was there — wearing apparel, rugs, pillows, bags, aprons, bedspreads and linens of various sorts. While most of the articles had been woven by present-day weavers, there were many heirloom pieces exhibited and examples of handweaving done in various foreign countries. As an added feature several weavers were busy at their looms during the day. On one loom there was being woven a beautiful 8-harness summer and winter table cover; on another there was an oriental rug, tied by hand with the Ghiordas knot, in the making; there were several tapestry looms and an especial feature was a Chinese lady weaving on her bamboo loom of the most primitive type.

During the first week of June, 1939, the second

exhibit sponsored by the Guild was held in the spacious auditorium of Frederick & Nelson, Seattle's largest department store. Entries were invited from other Guilds on the Pacific Coast as well as from individuals who possessed woven pieces of any sort. As was the case last year, there were all types of entries — many heirloom pieces and interesting things from foreign countries, including a rug from Egypt, a herdsman's cloak from Morocco, and a rare and valuable flax mat woven by the Maori tribes in New Zealand many years ago. Also displayed were beautiful pieces from Mexico and South America sent by Helen Louise Allen and pieces of picture weaving from Lou Tate.

Outstanding among the entries of local weavers were those of Mrs. P. Willis Holden, president of the Seattle Weavers' Guild. Displayed on the stage, as shown by the accompanying illustration, the coverlets and curtains she has woven for her beach cabin were greatly admired. Following her color scheme of red, white and blue, the cover on the day bed is blue and white with accents of red and the design is entirely laid in. The coverlet on the bed is also blue and white with accents of red in the "Guess Me" pattern. Each pair of curtains for the cabin — and there are 12 pairs — has a different design laid in for the border and for her designs she chose things associated with the water and the cabin — seagulls, a lighthouse, a ferryboat, fish, sailboats, trees, anchors, a nearby radio tower and in one she has woven in a picture of her cabin and the surrounding trees. Mrs. Holden has woven her pieces beautifully and the Guild feels that she is to be highly complimented on her originality.

Beautiful and interesting also were two handsome summer and winter tablecloths woven on 10 harnesses by Mrs. Grace Gaudy of the Kitsap County Weavers and Spinners Guild. There were several beautiful coverlets; many different types of draperies and several lovely pieces of yardage. Prominent as a part of the exhibit was the spot devoted to work done by the blind, and those with only partial sight, under the supervision of the Western Washington Training Center for the Blind.

Weavers at their looms during most of the hours of the exhibit and spinners working with wool and flax, using both a spinning wheel and a distaff, were of interest to visitors not yet acquainted with the process of thread-making and weaving.

The committee in charge endeavored to make the exhibits as interesting and complete as possible. A great many people visited the exhibits of last year and this year each day of the week they were open and members of the Guild feel that a great deal has been done to awaken even more interest in the new-old art of handweaving.

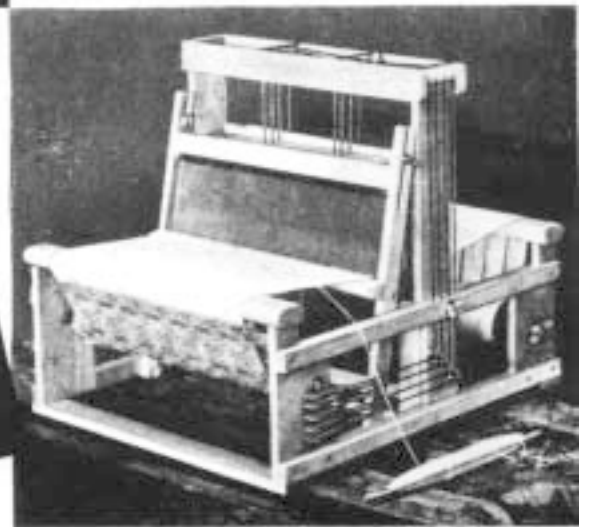
BERNAT

SUPERIOR LOOMS



With our years of experience furnishing superior yarn for Weavers, it is but natural that we turned to the manufacture of looms. In presenting Bernat Superior Looms we feel we have taken a real step forward in the world of weaving.

No ordinary looms are "Superior" looms, but instead they are the most advanced models in the market, embodying many new ideas. There are three sizes, each of outstanding merit. You'll want to know about each so we have prepared an illustrated catalogue, which is free upon request. Send for it today and see for yourself how easy it is to use the new Bernat Superior Loom; how because of their collapsible feature they can be stored away in a minimum of space. Bernat Looms, like Bernat yarns, are guaranteed. Prices are reasonable and are illustrated in the catalogue. If you cannot get the Bernat Looms at your dealer, write us.



EMILE BERNAT & SONS COMPANY, 99 Bickford Street, Jamaica Plain, Mass.

Makers of Looms and Yarns for Beautiful Weaving