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**Shuttle Craft Guild  
HANDWEAVER'S  
BULLETIN**

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Edition

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The Shuttle Craft Guild  
 Handweaver's BULLETIN  
 Volume XXXIII, Number 4  
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The Shuttle Craft Guild HANDWEAVER'S BULLETIN is written each month by Harriet Tidball (Mrs Martin Tidball). It is printed on a Gestetner Duplicator by Martin Tidball, who also has charge of the assembly and all Shuttle Craft Guild mailing, as well as doing all photography plus many odd jobs. Textiles are designed by Harriet Tidball, but the actual weaving is accomplished by Assistant Mrs Wilma Widener who assembles the PORTFOLIO and also handles files, records, orders, and all routine correspondence. All work is carried on in the Shuttle Craft Guild Home on the shore of Clear Lake, in Buckingham Park, ten miles from the post office of Kelseyville. Summer instruction is given here by Mrs Tidball, assisted by Mrs Widener. BULLETIN subscription is \$7.50 a year, with PORTFOLIO \$17.50.

TECHNIQUE VARIATION CHARTS

The spirit of sharing handweaving experiences and handweaving problems has long dominated the Shuttle Craft Guild, and has made possible many important contributions to the handweaving field. Following this spirit, a letter has recently come from a new Guild member, Katharine Barrett of Pasadena, California, who says, "Although I have been studying for three years and reading almost everything I could find, I was confused by the numerous names for the same weaves and how these weaves were similar or different. Therefore I attempted to make a classification which would clarify me. I had read that commercial designers put all weaves into three classes, namely, plain, twill, and satin. Trying to fit all the weaves available to handweavers into these three classes did not solve my confusion. There were too many techniques which seemed to call for classifications more definite than the simple three.

"Having helped an elderly lady with her family geneology, I decided to try the geneology method for the weave classification. As I tried this I found that I still don't know enough about techniques to properly arrange the multitude of weaves into their proper places on the chart. But it seemed to me that 'marriages' of different techniques, multiple shuttles, pick-up sticks, and the use of color all produced different offspring with names all their own.

"I am enclosing a geneology chart which shows more clearly what I am attempting to do. Here are the ideas I had; poor, perhaps, but my own. If you wish to use them in any way to lift the bemused weaver from his (and my) confusion, you are welcome to employ them in any way you wish."

Miss Barrett's letter is worth quoting because it not only shows a state of confusion which is

quite universal among handweavers, combined with a spirit of humility and a desire to share what she has learned in order to expand her own understanding, but it also points toward a system which can be of great help to all handweavers who wish to understand the art of handweaving.

There is one point of confusion in Miss Barrett's explanation of her dilemma and shown on her "trial run" geneological classification, and it is the point which leads most weavers astray in similar gropings. This is general lack of comprehension of the differences between techniques and methods.

There are two main elements in the production of any textile. First is the static element -- the system in which the loom is threaded. Second is the dynamic element -- the manner in which the weaver interprets or uses his threaded warp. The first element, or the threading system, is the one upon which the actual classification of weaves is made. The weaver who is interested in this over-all classification of weaves will find it taken up in detail in the BULLETINS for August, September, and October 1952 (still available, \$1.00 for the group, to Guild members). The weaves are first divided into large groups within which there are very broad relationships of threading systems. The groups are each divided into Classes, each Class having a single general theory of construction. Then under each class fit certain techniques which differ from each other in the details of their threading systems. There are in the neighborhood of one hundred techniques (many of these having several names, as Miss Barrett mentions) which thus comprise the scope of the handweaver as far as threading systems are concerned.

This system of classification is quite adequate within its own limitation, but the limitation is that it can handle only a classical interpreta-

tion of each technique. There still remains the great field of interpretive weaving, or what the weaver does with his static threading system.

It is in this field of interpretation of the techniques that the geneological system for developing variations can be of inestimable value.

In studying Miss Barrett's suggestion, we have found it serves as a fine basis for understanding the group of weaves which have been presented in the BULLETINS for February and March, and which are to be rounded out in this, April BULLETIN. These are the weaves which fall into the Double Twill technique of the UNIT WEAVE CLASS. It will be noticed that instead of following the geneological chart system of indicating "marriages" and "offspring" in each case, which would complicate the diagram to the point of making it unweildy, this charing is done more in the manner of the social-process or social-development diagrams which are so familiar to students. Further TECHNIQUE VARIATION CHARTS have not been attempted as yet, but this one is presented here in the hopes that it will stimulate Shuttle Craft Guild members to work out the interpretations of other techniques in a similar manner.

In the Technique Variation Chart for the Double Twill Technique, the first step is the union of two tie-up interpretations of a simple technique (the Twill) to form a more elaborate technique (the Double Twill). This technique is then developed with a progressive series of interpretations, the first one being the number of harnesses employed in the threading; the second the tie-up and treadle rotation system; and the third, the actual weaving interpretation. In this last development, the Classical form is complete, but the Interpretive form could be further developed along the lines of selection of materials, color harmony, warp set, placement of weft, and other individual designing points.

On the Chart, the third column presents the main interpretive variations, those based on tie-up and order of shedding. Some of these variations are so important that they are given full technique rating in the general Classification of Weaves. Under each of the variations is given the BULLETIN reference for directions for the weave. At the right of the fourth column a notation is made of the individual interpretations for which there are available Portfolio samples. (Although the BULLETIN for January 1952 on Damask weaving is out of print there remain a number of Portfolios for this issue which supplement the samples given in the March and April 1956 Portfolios. The price is \$1.25 ).

Further references on this group of Double Twill Techniques and Variations are:

General:

Appropriate Linen sizes -----	Mar. 1956, p 16
Suitable Warp Settings -----	Mar 1956, p 16
Warping Linens -----	Apr 1956, p
Selvages -----	Apr 1956, p
Washing and Ironing Linens -----	Apr 1956, p

The Double Twill:

Drafts and Tie-Up -----	Feb 1956, p 9
For Towels -----	Feb 1956, p 9
For Upholstery -----	Apr 1956, p

The Satin Weave:

Theory -----	Mar 1956, p 4
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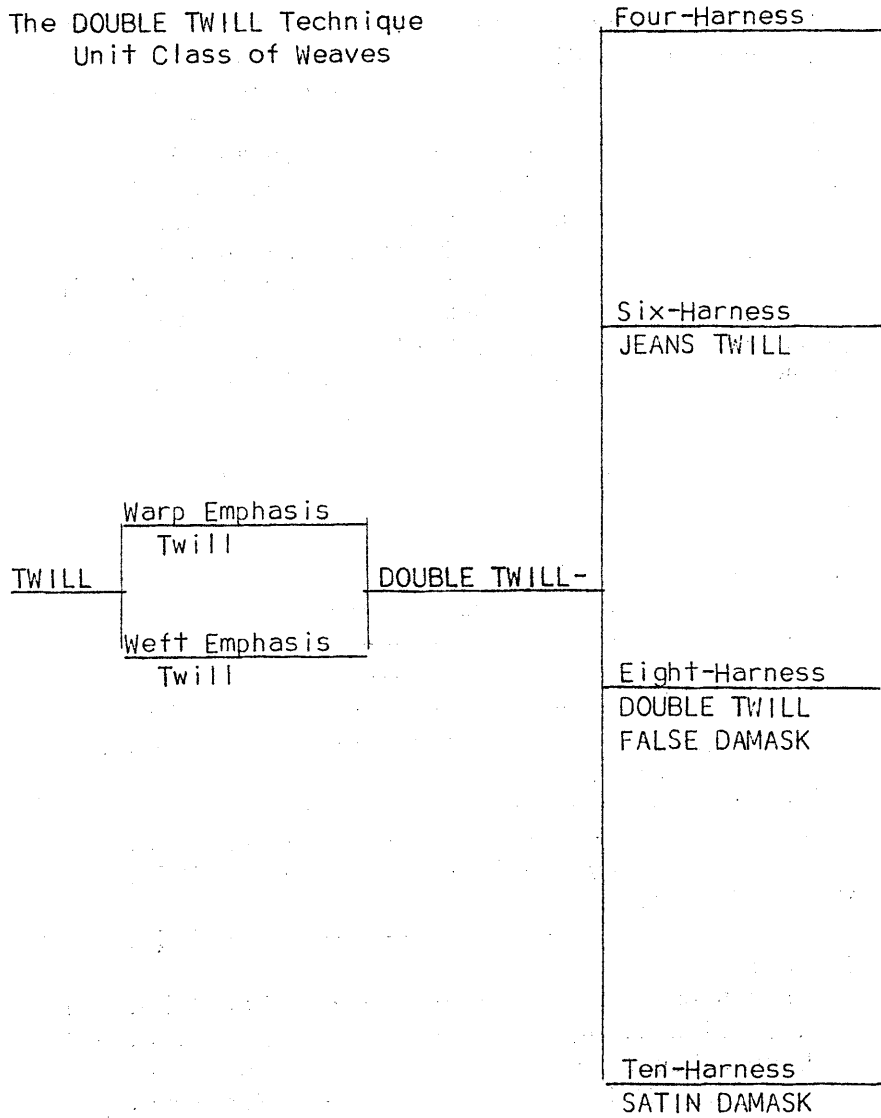
Damask:

Drafts and Tie-Ups -----	Mar 1956, p 11
Ways of Weaving -----	Mar 1956, p 19
Double Damask -----	Apr 1956, p
For Table Mats and Napkins -----	Mar 1956, p 20

False-Damask:

Drafts and Tie-Ups -----	Mar 1956, p 15
Four-Harness Pick-Up Method -----	Apr 1956, p
For Upholstery and Draperies -----	Apr 1956, p
For Table Linens -----	Mar 1956, p 20

TECHNIQUE VARIATION CHART  
 for  
 The DOUBLE TWILL Technique  
 Unit Class of Weaves



<u>Weft-Stripe Double Twill</u> (April 1956, p 8)	<u>Classical</u> <u>Interpretive</u>
<u>Weft-Stripe False Damask</u> (March 1956, p 15)	<u>Classical</u> <u>Interpretive</u>
<u>Pick-Up False Damask</u> (April 1956, p 8)	<u>Classical (*April)</u> <u>Interpretive</u>
<u>Warp-Stripe Jeans Twill</u> (April 1956, p 10)	<u>Classical</u> <u>Interpretive</u>
<u>Check-Pattern Jeans Twill</u> (April 1956, p 10)	<u>Classical</u> <u>Interpretive</u>
<u>Warp-Stripe Double Twill</u> (April 1956, p 10)	<u>Classical</u> <u>Interpretive (*Apr)</u>
<u>Check-Pattern Double Twill</u> (Feb 1956, p 9)	<u>Classical</u> <u>Interpretive</u>
<u>Warp-Stripe False Damask</u> (March 1956, p 15)	<u>Classical</u> <u>Interpretive</u>
<u>Check-Pattern False Damask</u> (March 1956, p 15)	<u>Classical (*Apr)</u> <u>Interpretive</u>
<u>Double-Twill Opposites</u> (April 1956, p 12)	<u>Classical</u> <u>Interpretive</u>
<u>Warp-Stripe Damask</u> (March 1956, p 13)	<u>Classical (*March)</u> <u>Interpretive (*Mar)</u>
<u>Check-Pattern Damask</u> (March 1956, p 13)	<u>Classical (*April)</u> <u>Interpretive</u>
<u>Double Damask Opposites</u> (April 1956, p 13)	<u>Classical</u> <u>Interpretive (*Jan 1952)</u>



FOUR-HARNESS DOUBLE TWILLS

A simple interpretation of the Double Twill technique may be made on a 4-harness twill threading by weaving the two contrasting surfaces as weft stripes only. This requires an 8-shed tie-up which presents no problems if the loom has eight treadles. Three tie-ups are given below: the first for eight treadles in which the A texture (weft emphasis) is treadled 1, 2, 3, 4, repeated, and the B texture is treadled 5, 6, 7, 8, repeated. The second tie-up, for a 6-treadle loom requires that for the B texture (warp emphasis) two treadles be operated simultaneously: 3 & 5, 4 & 5, 1 & 6, 2 & 6, repeated. On the third tie-up, for four treadles, three treadles must be depressed simultaneously for the B texture: 1 & 2 & 3, 1 & 2 & 4, 1 & 3 & 4, 2 & 3 & 4, repeated.

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

4				4		4
3			3			3
2		2			2	
1	1				1	
	1	2	3	4	5	6

4			4
3		3	
2		2	
1	1		
	1	2	3

This is similar to the 4-shaft (Broken Twill) False Damask given on page 15, BULLETIN for March 1956. The False Damask treadling on this tie-up is 1, 3, 2, 4, repeated; 5, 7, 6, 8, repeated.

FALSE-DAMASK PICK-UP

This article is by Mary M Atwater, quoted from the Shuttle Craft Guild BULLETIN for November 1948.

"I have been experimenting with a pick-up (false) damask weave, which is very simple and quite rapid and which will give four-harness weavers a chance at this finest of linen weaves. For table mats, borders

for linen towels, for luncheon sets, if one is ambitious, this will be found very handsome. Though as in other pick-up weaves, any pattern that can be drawn on cross-section paper can be woven in this manner, it is wise to begin with some fairly simple figure, and to weave blocks of at least two units. Single units are entirely practical, of course, but are sometimes confusing till one becomes accustomed to the technique.

For the (false) damask pick-up use a linen warp set somewhat closer than for plain tabby, and thread 1, 2, 3, 4 and repeat, with the tie-up as shown below

4				4	4		
3			3		3		
2	2	2				2	
1							
		1	2	3	4	5	6

Rising Shed

4	4	4	4	up	4		
3	3	3		3	3		
2	2		2	2	2		
1							
		1	2	3	4	5	6

Sinking Shed

Weave as follows:

Treadle 5 and make the pick-up of the background, allowing a pair of raised threads for each unit of the weave. With the pick-up stick in place, treadle 1 and weave. Treadle 5 again and make the same pick-up; treadle 2 and weave. Treadle 6 and pick up over the same space; treadle 4 and weave. Treadle 6 and make the same pick-up; treadle 3 and weave. Repeat these four shots for each unit of the weave.

Suppose you wish to make a simple pattern of alternating eight-unit blocks: treadle on 5 and pick up eight pairs of raised threads; skip eight pairs, pick up eight and so on all across. Treadle on 1 and weave. Continue the pick-ups and treading as above, repeating the four shots eight times. On the next pick up skip the first eight pairs and take up the next eight and so on across. Make the following pick-ups and weave as above."

DOUBLE JEANS TWILL

By utilizing the 3-harness so-called Jeans Twill, two-block stripes and patterns may be made on six harnesses. This is taken up in the BULLETIN for February 1956, page 8.

EIGHT-HARNESS DOUBLE TWILL and FALSE DAMASK

The threading and tie-up for the Double Twill on eight harnesses is given in the BULLETIN for February 1956, page 9. Warp-Stripe Double Twill is woven by treadling on one set of four treadles throughout. False-Damask is woven on this set-up by operating the treadles in the order: 1, 3, 2, 4, repeated, and 5, 7, 6, 8, repeated.

Either the Double Twill or the False-Damask technique can make a splendid basis for special effects in colors, mixed warps and textures, if woven unconventionally. Interpretations are made by setting the warp more closely or more widely spaced than for normal Double Twill, by using unconventional weft materials, by using different types of threads in different sections of the warp or weft or both, by arranging colors in unusual manners. The upholstery fabric below is an example.

AN UPHOLSTERY FABRIC IN DOUBLE TWILL

The plan for this upholstery fabric is given in detail, not because the weaver will wish to reproduce it exactly, but because it illustrates a happy solution to a very unhappy warp problem. The warp was threaded for an eight-harness Double Twill with stripes on 1, 2, 3, 4, repeated, alternated with stripes of 5, 6, 7, 8, repeated. The original intent had been a double-weave fabric for outdoor cushions pad covers and materials-on-hand had seemed to be

suitable so the usual sampling was overlooked. This is a designing error which is too apt to lead to trouble. The threads available were yellow 10/2 cotton (Lily Article 314, #404) and skipper blue 10/2 pearl cotton (Lily Article 114, #920). The 20-yard, 30-inch wide warp was made in the usual double weave manner by alternating the two colors, and the warp was set at 30 ends per inch, 15 per inch of each color. The problem which this warp presented lay in the colors only. The yellow and blue were too close to a contrast, and consequently when the two were woven in solid-color check blocks they vibrated unpleasantly and would have made an unhappy effect even for the outdoor furniture for which the fabric was planned. Sampling with different arrangements and colors in the weft indicated no improvement, because the close association of yellow and blue in the warp produced muddied effects which could not be relieved in the double weave because the two colors were present in equal amounts and were closely associated. In fact, the psychological effect of the warp was so unhappy that both the project and the loom were abandoned for many months.

The solution was found by harmonizing the two colors through using a single weft of chartreuse 7/1 linen (Davis Cordage, meadow green), a color which contained both the yellow and blue, but in a distinctly greyed hue. The tie-up was changed to the double twill, which meant that the warp was set much more closely than one would ordinarily set this size cotton for this technique. (A set of 24 to 26 ends per inch would have been more normal for a balanced, classical interpretation.) The fabric was woven in warp stripes by treadling 1, 2, 3, 4 throughout, which brought the larger areas into weft-emphasis surface and the narrower areas into warp-emphasis. The small tie-down spots of yellow and blue on the weft-emphasis areas acted to freshen and brighten the chartreuse color. The stripes

were almost warp-surface, with yellow and blue alternating, and the dull, greyed effect of this mixture made a pleasing contrast to the fresh chartreuse color. The result was a handsome and practical upholstery fabric. A sample of this is given in the PORTFOLIO.

#### DOUBLE TWILL WOVEN on OPPOSITES

Another Double Twill variation is weaving on opposites to give two different weft-emphasis surfaces with the warp almost hidden. One weaves this with two colors carried in two shuttles. The order of treading is:

	<u>BLOCK A</u>	<u>BLOCK B</u>
Treadle 1,	first color	second color
" 5,	second color	first color
" 2,	first	second
" 6,	second	first
" 3,	first	second
" 7,	second	first
" 4,	first	second
" 8,	second	first

This gives a heavier, thicker fabric, and one which permits the weaver to control the color blocks without regard to the color of the warp. It adapts well for a warp which is too widely set and gives a fabric which is too sleazy when woven in the more conventional manner. Interesting checks may be made by using a rough novelty thread in one shuttle and a smooth in the other, or a flat metallic in one and a natural fiber in the other.

One prize-winning fabric of many years ago, by Annie Albers, woven in this manner, has become familiar to many handweavers because photographs of it have appeared in so many publications. Most recently is the two photographs on page 134 of CONTEMPORARY HANDWEAVING by Overman and Smith, for which

no directions are given in the book. These two photographs show a single-direction twill line instead of having the direction reversed in each block. The single-direction may be woven by treading in the order: 1, 8, 2, 7, 3, 6, 4, 5, repeat. Illustration 9 IA shows the Check Pattern Double Twill on Opposites, and 9 IB shows the same thing woven as warp stripe by treading repeats of the Block A arrangement only.

DOUBLE DAMASK

The following article on Double Damask is quoted from the BULLETIN for January 1952, since this issue is out of print.

"Damask of a weight much heavier than the usual, and in two colors, may be woven in the Double-Damask manner. The weave produces weft-satin for both blocks, but each block is in a different color. The two sides are identical, except that the color relationships are reversed. The technique, as far as we have been able to discover, has not been published previously, at least for the handweaver.

The warp, threading, and tie-up for Double Damask are identical to those used for usual damask. Two different colors of weft, identical to the warp in size and type, are used. The colors should harmonize, and may be fairly strong. Avoid contrasting colors, and do not use dark tones unless the warp too is fairly dark.

To weave Double-Damask, throw the two shuttles, each carrying a different color weft, alternately. Treadle in the order: 1, 10, 2, 9, 3, 8, 4, 7, 5, 6, repeated. This order is maintained without variation. The two color blocks are changed by reversing the color order. Beat this weave very firmly. Draft and tie-up are given in BULLETIN for March 1956

WARPING DAMASK and DOUBLE TWILLS

The linen warps on which Damask and Double Twills are woven must be beamed under severe tension. Therefore, the beaming which gives the most satisfactory warps is the sectional method. This requires that the warper wind as many tubes or spools of yarn as there are warp ends in a single section of the beam. This job is not difficult if one has good winding and measuring equipment, and it is simplified if the sectional beam has one-inch instead of two-inch sections. For Damask or Double Twill, we beam 40/2 linen at 40 ends per inch, the correct setting for Double Twill, False Damask and for Damask napkins, and a good setting for Double Damask. Then for table-cloth or table-mat quality Damask, this is narrowed in the slewing to 45 ends per inch. All tubes or spools must have identical tension and therefore it is necessary that all be wound on identical spools, unless a sufficient number of tubes are purchased. The 40/2 linen is available from Lily Mills on 2-ounce tubes, each tube having about 750 yards. (The cost of 40 two-ounce tubes is considerable -- \$27.20 for oyster, \$32.40 for colors -- but it can be a long-run economy to plan a sufficiently large project to justify this expenditure )

If a long warp of this nature is made in a chain, very careful and severe tensioning are required during the beaming, and it is advised that one use the dowel method for beaming (shown by photographs in FOUNDATIONS FOR HANDWEAVERS) with an assistant to help control and tension.

These techniques must be woven on a severely tensioned warp -- probably more tension than for any other type of weave. Seldom will the warp go onto the beam with sufficient tension. This means that when the warp position is changed during the weaving,

and correctly tensioned, there will be a noticeable loosening of tension after one has given a few sharp beats. When (if) this happens, simply sinch up the cloth beam another notch. This effect may be quite prominent at the beginning of a long warp, but continual tightening will increase the beam tension so that the loosening does not occur toward the end.

On long chained warps beamed with padding, the loosening problem is different. If the warp is beamed with considerable tension and the beam is hard, usually five to ten yards will weave without any tension variant. Then it often happens that the whole warp will loosen very seriously and loops will appear on the beam. In some cases simply tightening the warp beam will be enough to handle the problem, or at least it will take care of it until one reaches the end of an article and can cut the warp. Weave one inch beyond the requirement of the article and place a stout dowel in a shed. Then cut off the weaving. Release the tension on the warp beam, and by holding the dowel and walking away from the loom, pull out as many yards of warp as possible. (We have pulled out as many as ten yards at one time.) Then place half a dozen 3/4" dowels in sheds in front of the reed and re-beam the entire length. This process is not difficult, and it may be done quickly if there are two people for the job.

### SELVAGES

There is no special selvage threading needed for Double Twill or Damask. Although the weft does not catch around the edge thread in every case, it weaves closely enough that a firm, neat, strong edge is formed from the normal threading and weaving. The edges weave so well that a perfectly straight selvage is almost inevitable, without any special handling.



WASHING LINENS

From a French Laundry which specializes in handling the most valuable of linens comes the following advice. After washing, always dip linens in a very thin starch. Use the old fashioned boiled starch and to it add a small piece of paraffin. No exact formula, as this seems to be a matter of instinct and experience, like French cooking. This not only gives a more beautiful finish to linens, but also makes them very easy to iron.

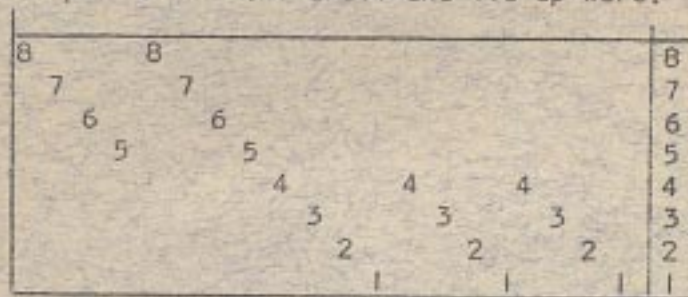
THREADBENDER NOTES

Mr Elmer Hickman announces that because demand has been so great for his most recent Folio, LINENS ON PARADE, he is having a limited edition reprinted. Anyone who has not been able to secure this may now get it from Elmer Hickman, Rt 2, Emlenton, Pa, \$5.95.

For the weaver who wishes to make translations of the splendid Finnish weaving books, there is a new FINNISH-ENGLISH WEAVING GLOSSARY, compiled by Aina Ringler and published by the Craft and Hobby Book Service, Coast Route, Monterey, Calif, \$2.00. This pamphlet should be much more useful than the usual language glossary as it introduces one to pronunciation and grammar, and explains how to make conversions for reed settings. It also contains a bibliography of Finnish Weaving Publications.

Now is the time when many weavers are making plans for summer weaving study-vacations. The spring HANDWEAVER AND CRAFTSMAN containing announcements of all summer weaving courses will be here soon. Notice especially Mr Hewitt's Mexico Tours, the one starting July 29 with Mrs Mary Atwater as co-escort, and the one starting August 19 with Dorothea Hulse. With the Shuttle Craft Guild, May and June are filled, students may still be accommodated in July and August.

Sometimes a yardage comes off the loom, intended for Portfolio samples, but so beautiful that it seems almost a tragedy to cut it. That was the case with the rose and blue False-Damask at the right. A gorgeous upholstery. The material is 20/2 linen from Frederick J Fawcett, 129 South Street, Boston 11, Mass. It was beamed and sleyed at 24 ends per inch. The draft and tie-up were:



8			8			8			8	8	8	
7				7					7	7	7	
6	6				6				6	6	6	
5			5			5			5	5	5	
4		4			4	4		4	4		4	
3				3		3	3	3		3	3	
2	2				2	2	2		2	2	2	
1			1			1	1	1		1	1	
	1	2	3	4	5	6	7	8	9	10	11	12

Treading: 1, 2, 3, 4 -- 3 times (weft emphasis)  
 5, 6, 7, 8 -- 3 times (serrations)  
 9, 10, 11, 12 -- 5 times (warp emphasis)

This could have been woven on a four-harness threading, and rapidly, by Mrs Atwater's False-Damask Pick-Up method on page 8. For a long piece, the weaver would probably wish to reduce the serrations, which are the only picked up portion, to one or two repeats instead of three.

