

**POPULAR  
RUG TECHNIQUES**

By

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# Popular Rug Techniques

The title of this publication suggests the purpose of this folio—to employ tried and true techniques, new and old, and otherwise that produce satisfactory rug fabrics combining utilitarian results as well as beauty, and enjoyment for the weaver who accomplishes these results. Since space does not permit the elaboration on this extremely rewarding phase of the weaving craft, I refer you, to what I consider, our most comprehensive present day rug book, RUG WEAVING FOR EVERYONE, by Gallinger and Del Deo. This rug book together with Mary M. Atwater's out of print HANDWOVEN RUGS, RUG WEAVING by Lewes and Hutton will provide the weaver with a wealth of knowledge about rug weaving. There are other excellent publications, such as Shuttle Craft Monograph Eight about Peter Collingwood's work, and numerous Scandinavian books. A new book, RUG MAKING by Mary Allard is just off the press and is worth owning.

**YARNS.** The Lily's 8/5 Linen Rug Warp is mostly used for warp in the textiles of this folio, and purposely so—it is an excellent warp. The 6 Cord(10/6) from Butterworth is a stout cotton twine which has proven very satisfactory for the rugs described in this folio, when doubled in the heddles and set at 6 ends to the inch.

Rug weft yarns are plentiful, some better than others, and some rather expensive. I used a variety of weft yarns so that the folio readers may see different types of rug yarns in actual woven textiles. Although the yarns from Troy and The Mannings are inexpensive, the quality of the yarns is excellent, since the yarns are mill ends from a famous rug manufacturer. Other good rug yarns are available from Thomas Hodgson & Sons, Briggs & Little's Woolen Mill, Robin & Russ Handweavers, D.K. Deyrmanjian, etc., whose addresses are given in the "Sources of Supply" list.

Please remember that rugs are made to walk on, and must possess good wearing qualities. Therefore, wool yarns are the best to use, since wool stands up under foot, and remains clean for a reasonable length of time. But do not use knitting yarn for rugs; it will be a waste of time and money.

The woven samples in the folio, owing to their size, may not do justice to the large yardages that were woven, but they contain every step necessary for the completion of many handsome textiles. The additional information given in this booklet will further help the weaver with much enlightening knowledge of the techniques, some, of which, heretofore, has never been published.

## No.1 DOUBLE KROKBRAGD

This interesting weave from the Scandinavian has always been appealing in light weight fabrics as well as heavier textiles. The 3-harness version was used for the rug technique in this folio. Single Krokbragd on three harnesses, threaded 3-2-1-2 may be used with the same set-up, and also a 4-harness Krokbragd draft—4-3-2-1-2-3 may be threaded to the same set-up. The 4-harness weave produces more squarish designs. Selvages will help the weaving and strengthen the textile, as well as provide edges so that the weft yarns need not be wrapped around the selvages. Furthermore, should finer rug wool be used, two tones of, say, red could be used in the same shed, with one color thrown from opposite sides of the loom, and interlocked at the edges to form a neater selvedge. It would take more shuttles to use this method, however.

The 3-ply Paternayan Pat-Rug yarn beats down well, since all warp must be covered in Krokbragd weaving. Thomas Hodgson's 4-ply rug wool, while being an exceptionally beautiful rug yarn, will not make so heavy a rug, since the Hodgson wool will not beat down as well as a 3-ply yarn. If a 4-ply yarn is used for weft, it would be well to sley the warp in a 5 dent reed, with one end in a reed dent.

No.2 DOUBLE FACE WEAVE

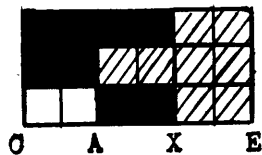
This draft is Joseph France's "Plain Back Cord", No.23, page 31 in Margaret Davison's HANDWEAVERS PATTERN BOOK, 1947 edition. The order of treadling to form the pattern squares is really done by the "Log Cabin" method. It is better to have the two weft colors decidedly contrasting in tone, although some of my experiments were with analogous colors with excellent success. It is well to change sheds before beating down the weft. The Pat-Rug yarn will beat down more easily than the Canadian 6-ply that was used in the woven sample. Should your loom have a light weight beater, get an iron bar, about 5/16" thick by about 1½ inches wide, and the length of the underside of your beater; have 3 holes drilled through the bar, so that the bar may be screwed on to the underside of the beater. This will give sufficient weight for rug beating, as the warp in this weave should be covered as completely as possible.

The selvages can be neatly woven if care is taken to interlock the weft yarns at the edges, in which case, when the weft in a shuttle is about to run out, let the end of the weft lie somewhere near the center of the weaving; then splice the weft by cutting off about an inch of one ply of the weft yarn. When the new shuttle of weft is introduced into the shed, cut off two of the 3 plys, so that the joining of the two weft yarns, when they meet, will be about equal in size to the original yarn.

No.3 ROLLAKAN and AKLAE

Since Norwegian Aklae done with heavy yarns was not exactly presentable on both sides of the weaving, I decided to use the Scania Rollakan technique for this rug folio. The Rollakan makes a fairly heavy rug with two strands of Cowhair yarn in the butterfly bobbins; three strands were too heavy, preventing the weft to be beaten down so that the warp would be completely covered--and the warp must be completely covered.

The technique for weaving the woven sample, with the design opposite, follows:



One square on the graph paper represents two warp threads, one front and one back warp. The weaving is done with the wrong side facing the weaver. There are two particular sheds in weaving Rollakan: the Pattern shed is the one with the last warp at the left on top of the shed. The Interlocking shed is the shed with the

last warp thread at right on top of the shed. Start laying in butterfly bobbins at left of loom, but to the right of the pattern area. That is, tail end of bobbin at A, and bobbin proper at C, and bobbin hanging out at left selvage. Always work from the right to the left on the Pattern shed, and work always from left to right when using the Interlocking shed. The process of interlocking the weft takes place on both sheds.

It is easier to lay in the first row of bobbins starting at left of loom, but thereafter the work on the Pattern shed starts at right, in order to do the interlocking process. Blank squares=Yellow. Dark squares=Blue, Striped squares=Turquoise.

1. Lay in Yellow bobbin from A to C (2 front and 2 back warp threads). Lay in Blue bobbin from X to A. Lay in Turquoise bobbin from E to X. The "tails" of the bobbins will be at A, X, and E. The bobbins proper will be at C, A, and X. This process is done all across the warp, according to the graph paper plan, laying in all new bobbins on the Pattern shed. Tie in all tails of the bobbins with a slip knot around one warp thread. You need not interlock bobbins on this first row because of the knotting. BEAT. Change the shed to the Interlocking shed and beat again. (In Rollakan, interlocking takes place on both the Pattern and the Interlocking sheds, except the very first row.)

2. Bring the Yellow bobbin through this now Interlocking shed (starting from the left of the loom) to A, where the Blue bobbin is picked up, brought around the Yellow weft thread (this is interlocking), and put directly through the shed to point X. The Turquoise bobbin is then picked up, brought around the Blue weft, and put directly through the shed to E, the edge of the sample pattern area. By "directly" I mean (continued)

the bobbin is put in the shed without going around any warp thread. Beat.

3. Change back to the Pattern shed and beat again. Starting from the right of the loom, repeat No. 1 step above, plus interlocking, then repeat No. 2 step until design units are built up to square the pattern, using either 2 or 4 warp threads as a gauge. (The areas in the woven sample are not squared.) Squaring the design unit must be determined by the size of yarn used--it may require less or more than 8 rows of weaving on both the Pattern and the Interlocking sheds to accomplish this. After the first row is squared, tie a slip knot with the Yellow bobbin (or tuck end in); cut off the Yellow bobbin within an inch of the web. (All pattern changes take place on the Pattern shed.)

4. TO CHANGE THE DESIGN. Start now at the right side of loom, on the Pattern shed, and bring from right to left of loom the Turquoise bobbin, through the Pattern shed from E to A. Take the Blue bobbin up over the surface (out of the shed and over the top of the weaving, and over the Turquoise bobbin, putting the Blue bobbin in the shed from A to C. Beat. Change the shed to the Interlocking shed and beat again.

5. You now have the Interlocking shed, Starting at the left of loom, put the Blue bobbin through the shed from C to A. Bring the Turquoise bobbin (interlocking it) up around the Blue yarn and put the Turquoise bobbin through the shed from A to right selvage E, and beat, Square this unit of design, alternating the Pattern shed and the Interlocking shed. All bobbins at all times must be going in the same direction for each row.

6. CHANGING THE DESIGN FROM LEFT TO RIGHT. (and in this case also back to left of loom again). Get the Pattern shed and beat. Starting at right side of weaving E, lay in the Turquoise bobbin from E to X, then bring the Blue bobbin up and around (under and over the Turquoise yarn) the Turquoise yarn and put the Blue bobbin in the shed at X, and clear through the shed to the outer selvage C. Beat.

This completes the entire process of the Rollakan technique.

AKLAE. The set-up is the same as Rollakan--the warp, the threading, the sleying, the weft, and the treadling. Like Rollakan the first shed is the Pattern shed, and the other shed is the Interlocking shed. The first row of bobbins is laid in just as described for Rollakan. But there the process changes. Interlocking takes place only on the Interlocking shed. There is no interlocking on the Pattern shed. All work on both sheds starts at the left of the loom. All pattern changes take place on the Pattern shed, as it does in Rollakan.

AKLAE PATTERN CHANGES. If the design change is only toward the left of loom, the bobbin is put through the Pattern shed as usual--laying the bobbin as far in the shed, toward the left, as the graph paper design designates. If the design requires that the bobbin goes to the right of the loom, this is the process: on the Pattern shed take the bobbin under the first top warp thread to the left, change to the Interlocking shed, then take the bobbin through the Interlocking shed to the point called for on the graph paper design, and bring the bobbin to the surface of the weaving. Change to the Pattern shed, and lay in the bobbin in the usual manner (from right of loom to left of loom). Where the weft thread was taken under the first warp thread to the left there will be two thicknesses of weft, but that was to prepare the interlocking process, and this thickness will beat down as the work progresses. Be sure, after the Interlocking shed arrangement in the above design change, that you change back to the Pattern shed before proceeding with laying in the rest of the bobbins toward the left of the loom, which must occur on the Pattern shed. All bobbins must be going in the same direction in each particular row, except when you make that design change toward the right of the loom. If the design change---after the bobbins (or bobbin) have been taken to right of loom---goes further to the left of loom than the point where the design change was started (from left to right) then take the bobbin to the left in the Pattern shed as far as the graph paper designates. (Continued)

(Aklæe, continued)

Example: If you started at a point B to take the weft back of the first warp-to-the-left, and went to the right of the loom to, say, point C, and the design designates that you go to left of loom and pass B in the Pattern shed, take the bobbin past point B, and thru the shed to, say, point A, which is further to the left than point B.

When one works with finer yarn in Aklæe weaving, one makes that Interlocking shed, to get to the right of loom, by pulling out the back warp threads (Interlocking shed, really) with the fingers, rather than change to the Interlocking shed by means of the treadles or hand levers. The Norwegian Aklæe make a neater wrong side to any weaving, which is usable, while the Swedish Rollakan method makes a less neater wrong side to the textile, which is unusable. Cut off any finished bobbins and tuck ends down into the web.

No.4 MODERN COTTON/RAYON RUG.

There is not much more to say about this technique besides what is given on the sample sheet; I wanted to try the new Rayon/cotton warp and weft, and found them to be of good quality, and of much better wearing qualities than the old mop stuff previously used for filler by many weavers. This rug is an original of mine, picked from a sampler of 200 different designs, and liked by many. The warp and filler used in this sample is boil proof, and comes in a nice selection of colors. (Oriental Rug Company) It would be well to choose two colors of great contrast, or the result may be muddy. Thomas Hadgson's 4-ply Rug Wool may be substituted for the filler in this textile.

No.5 SOUMAK (Contemporary)

This too little used technique among our weavers deserves more consideration, especially now when patio mats and a more rustic effect is given to some rooms in the house. The weaver can make the finished product as heavy as desired, by winding more strands of yarn into the bobbins, or the other method given in this folio. Designs may be produced in Soumak but there is the problem of getting rid of loose bobbin ends. If the designs are carried out in a Soumak rug, always add new colors on the left to right direction. However, handsome practical contemporary rugs may be made with only selvage to selvage knot construction; using, if desired, several colors in the weft yarns as shown in the accompanying woven sample.

The Soumak knots are tied on a closed or neutral shed. The traditional way of making the Soumak knots is go over 4 warp threads, back under two, around and over these last two, and over plus two more (4 ends), back under two, and continue this process. Upon analyzing this process I found that it was nothing more than tying a slip knot around every two warp threads, and that was the method for making the woven sample. It is the same knot--some call it half hitch--that is used in "Swedish" knot tapestry, done usually on frames, with the knot tied around only one warp thread. If the weaver has done this "Swedish" knot (which is really a Flemish knot) looks on the underside of the weaving, he will find a Herringbone effect. This wrong side of the "Swedish" knot textile is what we use for the right side of the Soumak rug. Because of the tabby we use in Soumak, the wrong side of a Soumak fabric is not so closely formed as the right side of the "Swedish" knot fabric.

When one ties the Soumak knots, according to the traditional method as shown in many books, one makes a difficult problem out of a rather simple process.

First weave a tabby heading for the rug. When one starts weaving Soumak the warp threads are separate units through the reed, but after the weaver makes one row of the Soumak knots the warp threads tend to merge together in pairs, and two warp threads simulate one warp thread. One tabby shot will not separate the warp threads; this is good, however, since the method of tying the Soumak knots becomes this: the weaver, rather than bother with the pesky "4 over, 2 back under, etc." routine, really makes a slip knot on every pair of warp threads all the way across the warp width, (continued)

in both directions (from left to right, and from right to left of loom). See illustrations on Technique sheet for tying the slip knot.

Starting from the left of the loom, take a butterfly bobbin and tie a slip knot on the first two warp threads, according to Fig. 4. Go over to the right of the next two warp threads, roll bobbin from the right of these two warp threads, going under them to the left; bring bobbin up through the loop made by the yarn---the loop being at the left of the pair of warp threads---and pull down the slip knot to tighten. Continue this procedure across the weaving to the right hand selvage. After the row of knots has been completed, throw a tabby shot(Hars. 1&3) of 10/2 Linen yarn, which has been wound on a shuttle. Now to make the turning (my concoction) so that the butterfly bobbin may be brought back making a row of knots from the right to left direction. You will find that the bobbin, after completing the Soumak knot row from left to right, out over the last pair of warp threads on the right of loom. (The tabby shot has already been put in the weaving.) Take the bobbin and put it up over the tabby weft and in between the last pair of warp threads and the next pair of warp threads in towards the center of the weaving, and put it under the pair of warp threads at the right selvage and out. You will find that this last movement makes a vertical formation of the weft yarns. Now you are ready to tie the Soumak row of knots from right to left. (See Fig.3-Technique Sheet.)

Starting at the right of loom, proceed to tie the Soumak knots, with the slipknot process, but the slip knot loop through which the bobbin is put will be to the right of the pair of warp threads. (When working from left to right the slip knot loop will be at the left of the warp threads; when working from right to left the slip knot loop will be at the right of the warp threads.) When the row of Soumak knots has been tied from right to left, put in the tabby of 10/2 linen. To turn the direction for the left to right direction of knots, take the bobbin up over the tabby weft, down in between the second and first pair of warp threads, under the first pair of warp threads, and out past the selvage. This method of turning the bobbins gives an unusual finish to the edges as well as strengthening them. You are now ready to make the third row of knots, which is made exactly like the first row of knots. The fourth row of knots will be made like the second row of knots. Repeat these two formations for the length of the rug. (See the second method of making the knots below.)

Different color borders may be made at both ends of the rug, or varied stripes may be designed for the rug.

Another, and perhaps easier, method of weaving Soumak is this: make precut yarn lengths, having 4 strands of yarn wound together--about  $3\frac{1}{2}$  times as long as the setting in the reed (Ex. For a warp set 26 inches in the reed, allow about 84 inches in the weft yarn lengths). Start from left of loom, having wound the yarn lengths into butterfly bobbins. Put the ends or tails of the bobbin at left edge of weaving in a shed that has the outermost warp thread on top of the shed, and start bobbin proper about 3 pairs of warp threads in from selvage, taking the bobbin through this shed out to the left of loom (or right when working from the right of loom, as on the second row of knots). Put the ends of the bobbin down between warp threads tapering the lengths of the bobbin ends--done by cutting off some yarn from two of the ends, then close the shed. The butterfly bobbin is now clear of the weaving. With the bobbin make a slip knot around the first pair of warp threads, and the bobbin will be outside all the warp ends once again. Continue to make the slip knots around each pair of warp threads from left of loom clear across to right selvage. If you analyze this process you will find that you have advanced over 4 warp threads and gone back under 2 warp threads, which is the Soumak technique. When you get to the right selvage, tuck the bobbin yarns, through a shed, down underneath the warp to the underside of the weaving. Put in one shot of tabby and beat. The next row of knots (from right to left) is done in the same manner as above. The slip knot loop for making the knots is on the left of your warp threads when making the knots from left to right of loom, and on the right of the warp threads when making the knots from right to left of loom.

(Soumak con't.)

For speed keep the hands on top of the warp, using only the middle finger of the left hand (regardless of the directions of the bobbins) to feed the pairs of warp ends to the right hand in order to make the slip knots.

Soumak knots may be made in only one direction, left to right, or in two directions, such as shown in the woven sample, which give the Herringbone pattern.

NOTES: Be sure to use always the correct tabby sheds for the tabby shots.

Do not pull the Soumak knots too tight, or the warp threads will be thrown out of alignment.

When tucking in the weft ends, do so by making each ply of the weft a different length so they will taper off and not bunch together.

Soumak rugs may be made with a woven selvage, using 4 or 6 warp threads on each side of the weaving, the edge binding being woven with the same yarn that is used for tabby shots. This method is shown on the technique sheet for FALSE FLOSSA selvages.

#### No.6 IMITATION TAPESTRY (Clasped weaving)

This weave, although not new, is enjoyable to do--and as some weavers express it "fun to do". If I had woven the yardages for the folio samples in the manner in which one would actually weave a rug, most of the samples, when cut, could have been a piece of plain weaving (not very interesting). Therefore, in order to give weavers an idea of the technique, I had to weave individual samples, which required the winding of over 800 butterfly bobbins.

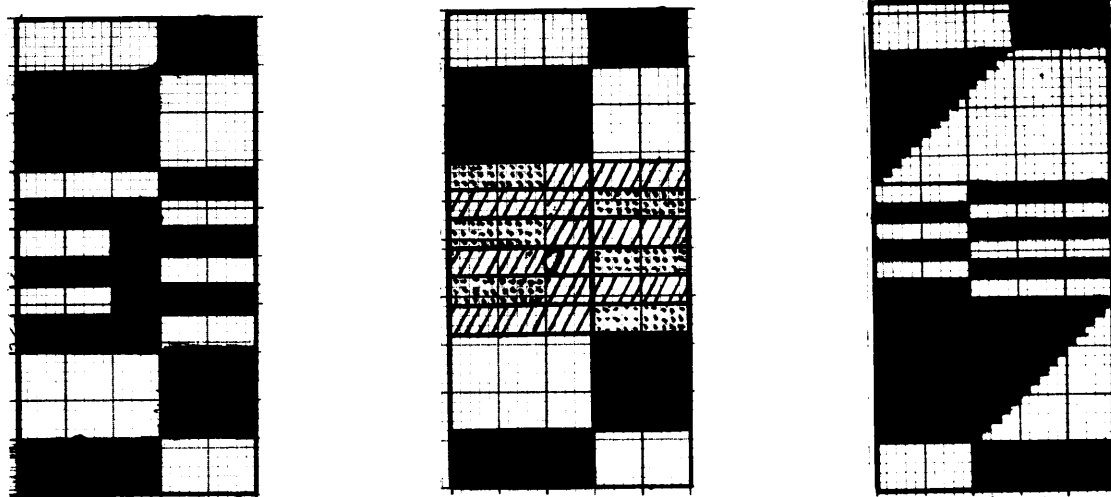
Two shuttles are used, carrying two colors, one color on each shuttle, (or shuttles may be wound with multiple colors as was used for the woven samples) preferably of two contrasting colors. The tabby sheds are the only sheds used for this technique.

With one tabby shed open, one shuttle is put in the shed from the right of loom, clear through the shed so that the second color may be picked up, with the first shuttle, from the left of the loom. The first shuttle brings the two weft yarns into the shed--one weft has been interlocked around the other weft. The weft from the second shuttle is stopped at a certain point, and the first shuttle is taken clear through the shed to the right selvage. This process makes a double weft in the shed, as it should be. Beat. Change the shed to the other tabby shed and beat. (The heavier the weft yarns the heavier the rug will be.) The above process continues, stopping the weft from the left at any point in the weaving as desired. Please see woven sample.

Rather than use two shuttles, use only one shuttle which will be put in the shed from the right of loom. For the second color of weft, coming from the left of loom, have it wound into a ball, or on a cone, and place this ball or cone in a container of some kind so that it will unwind freely. Proceed as above, bringing the shuttle from the left and picking up the second color which is coming from the container. When one wishes to use a spool or tube of yarn, place it on a spool rack at the left side of loom (or the right side as you wish) and the same principle is used as previously described.

Creative designs of a random variety may be accomplished with this method of weaving. However, a planned rug design may be drawn first on graph paper, such as the designs shown and developed with this clasped or locked weave technique. Two colors may be used to form the design. More than two colors may be introduced by cutting off a color and a new color brought into operation. However, only two colors may be used in any case, at one time. It is possible to use three colors at one time, but the weaving process becomes so involved that it would be better to use a true tapestry technique. On the working side of the fabric the interlocking will form "bumps" of yarn, but on the underside of the textile the surface will be smooth--either side is usable.

Several designs for this weaving may be found on the next page. One design shows the design for two colors, then the same design is repeated to show how four colors may be used. A "random" design is shown on the TECHNIQUE SHEET.



IMITATION TAPESTRY designs

No.7 FALSE FLOSSA

This imitation of the real Flossa rug is a shuttle weave, primarily. The resulting fabric taken from the loom is a rather substantial textile, but I doubt if a rug in this technique will wear as well as the real Flossa rug. The technique is a pleasureable occupation, however, and takes less time than the real Flossa technique.

Besides the weft yarn given on the sample sheet, rug wool from The Mannings could be used with satisfactory results, winding about 10 strands of the yarn on a shuttle. I wove some samples with the Manning rug wool and the result was a finer texture than the pile accomplished with the Troy rug yarn. (The Mannings yarn was used for the knots in the real Flossa woven sample.)

The method of weaving the FALSE FLOSSA was this: warp was set 27 inches wide in the reed. A length of the rug yarns, using 6 strands of the rug yarn together, 43 inches long was cut first, then tested to see if the length of yarns would make the loops across the weaving as desired. If the length was all right, other lengths of the 6 strands were cut, using the first yarns length for a measurement. (One should allow about  $1\frac{1}{2}$  times the reed setting for the length of the yarns.)

Treadle the pattern shed (either Hars.  $3\frac{3}{4}$  or Hars 1&2, according to which type of loom you are using). This pattern shed shows only two warp threads on top of the shed at about every  $1\frac{1}{2}$  inch intervals. Use a stick shuttle to put the weft yarns length through the shed, always from the right of the loom. Put the shuttle down between the 4th and 5th warp threads, leaving about 2 inches of the weft yarns protruding above the warp surface, and take the shuttle through the shed to left of loom. Bring the shuttle to the surface of the weaving between the 4th and 5th warp threads at the left of the loom. Discard the shuttle. Close the shed and bring the weft forward just enough to hold the 6 strands in place--do not beat. This assures a temporary placement of the weft strands.

Starting at the right of the loom, pull up at intervals, enough of the weft yarns to allow for the arc or loops of weft (see woven sample), being careful not to pull out the 6 weft ends at the right selvage. Gauge the height of the loops with the index finger of the right hand. Hold the first arc-loop at right of loom with the right index finger under the loop, and the right hand thumb on top of the loop, while with the left hand pull enough yarn of the six strand weft from the left to form arc-loop No. 2. Transfer the right hand to the second arc-loop of yarns, hold  
(continued)



### False Flossa, continued

in tact, and with the left hand pull enough more yarn to form the third arc-loop.

Repeat this procedure clear across the web—that is, hold the already formed loop with the right hand, gauging the height of the loops with the right index finger, while the left hand feeds weft from the left of the loom to form the next loop.

When you have formed the last arc-loop on left of loom, leave about 2 inches of yarn ends project from the left selvage, then cut off any excess strands of weft beyond the 2 inches. Beat. Now put in two shots of tabby and beat well, but first read the next paragraph in regard to building the selvages. (See Technique sheet.)

After each row of arc-loops has been formed, put in a tabby shot from right to left on the Hars. 1&3 shed and beat well. Change to the Hars. 2&4 shed, and put tabby back toward the right under 2 warp threads; change to the Hars. 1&3 shed and put tabby weft under 2 warp threads toward the left (you will have to take the tabby weft around the second raised warp thread), and beat. Change to the Hars. 2&4 shed. Take the tabby around the top warp thread and clear through the shed to the right selvage. Change to the Hars. 1&3 shed. Put tabby in the shed under 2 warp threads. Change to the Hars. 2&4 shed. Take tabby around the second top warp thread and out to right selvage. Now you are ready to put in the next row of loops, so change the shed to get the pattern shed (Hars. 1&2 or Hars. 3&4), whichever shed you used to make the first row of loops.

Put in the next row of arc-loops, and repeat the routine of the tabby weft, for binding in the arc-loops and for the selvage building, which must be done after each row of loops. This process of selvage building gives a tight selvages, if beaten down all, which will show very little after the cut pile has been brushed out and tramped down.

To cut the loops in order to make the pile surface. After the textile has been taken off the loom, cover the wrong side of the almost-finished rug with a coating of rug backing. Pint size spray cans of rug backing may be bought from Lee Ward, Elgin, Illinois, or a quart non-spray can of latex rug backing may be bought from Sears, Roebuck & Co., for about the same price. The latex backing from Sears will have to be put on with a brush, or spread on the back of the rug with the can in which the rug backing comes. To cut the loops, slide a flat stick or a thin metal strip up under the loops—to form a base so that the tabby weft will not be cut—and with scissors, cut up through the middle of the loops (No, I think you will find scissors the best). After cutting the loops, brush the now cut pile with the hands to spread it out and fluff it. Having done all of the above, I think you will find the finished rug most satisfactory. (I was delightfully surprised.)

DESIGNING. Stripes all over, or only at the rug ends, or borders at both ends, using contrasting or harmonizing colors will be effective. Geometrical shapes may be previously planned on graph paper. If graph paper is used, get from Keuffel & Esser Co., Adams & Third Streets, Hoboken, New Jersey---11 x 16 size sheets with 12x20 to the inch spaces (rectangles rather than squares. I sent a check for \$1.50 and received 10 sheets of paper--the number of sheet is 47-1970). The rectangular spaces will more correctly simulate a row of loops plus the tabby area in order to determine the size of your design. When making a design in the rug, lengths of the 6 strands will have to be cut, allowing for about one inch excess of yarn ends where two colors of the design meet, leaving the ends above the surface of the work, trimming them off later. The 6 strands may be of the same color, or may be of a multiple color group as shown in the woven sample. The woven sample shows one loop uncut, and the ends of the sample show one half of the cut loops.

Note. The rectangular graph paper is excellent for Rya rug planning.

## Nos. 8,9,and 10 FLOSSA, RYA, and RYA WITH KORNDROLL GROUND

This series of pile rugs may be intricate or simple in design, the simple designs seem most effective. This type of weaving offers great possibilities for creative designing. Two recent books, with photographs, show the beauty and simplicity of design, NYA MATTOR by Gertrud Ingers, and UUSIA MATTOJA JA RYIJYJA, Rauha Aarnio.

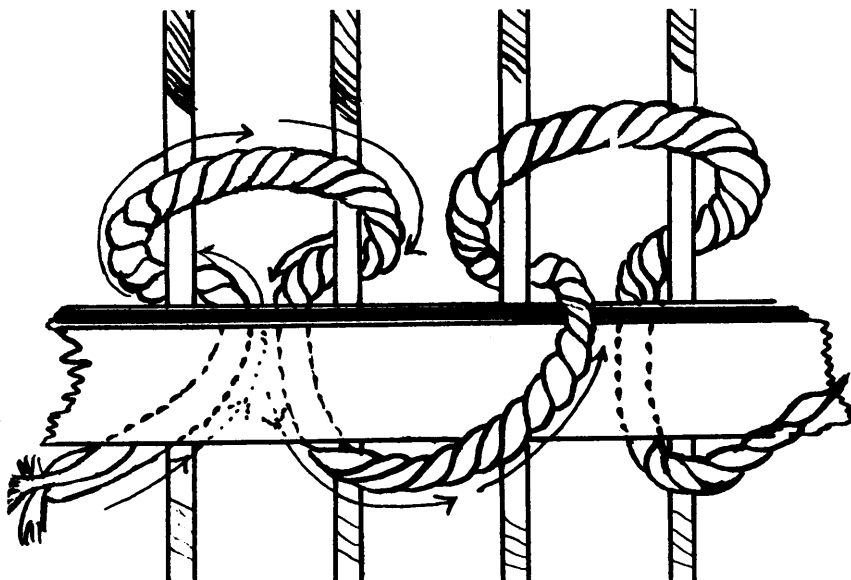
It isn't necessary to use the most expensive yarns for these pile rugs. We are now, fortunately, able to buy good quality mill end rug wools, inexpensively, from The Mannings, Troy Yarn Co., and Butterworth. The gauge bars should be of metal, height depending on the height of pile desired. For Flossa, a 1/2" bar is good; for Rya a 1 1/4" gauge bar is satisfactory. Some weavers like the Rya knots longer than those made with a 1 1/4" bar, which is all right, but too long Rya pile gets unruly when lying on the floor. Rya pile lies horizontally in the finished rug; Flossa pile is in a vertical or standing position when the pile is cut. The ends of the yarns show in a Flossa rug, while the sides of the yarns are seen in a Rya rug. Gauge bars should be, at least, 8 inches longer than the width of the warp set in the reed.

The Ghiordes knot, used in these techniques, is made on a closed shed. The knots in the woven sample of this folio were made on two warp threads--every two warp, with no warp threads skipped, as is sometimes the custom. The knot is shown in the illustration below. Allow 4 warp threads for selvage on each side of loom.

Tie the first knot, at left of loom, on the 5th and 6th warp ends. Having wound the weft into a butterfly bobbin\*, put the bobbin, from the right of the 5th warp end, leaving about 3 inches of the end hanging free, under the 5th warp thread, around it and cross over top of the 5th warp thread, and over top 6th warp thread. Bring the bobbin under the 6th warp thread and up between the 6th and 5th warp threads. Pull the tails of yarn and the bobbin proper down to the already woven heading.

Now lay the gauge bar on top of the warp threads--on its side--with the top of the gauge bar even with the tabby heading that has been woven, laying the bar over the tails of the first knot, as well as over the yarn coming from the bobbin. The yarn coming from the bobbin is now under the gauge bar, as it should be. Tie the 2nd knot and all succeeding knots in this manner: Bring the bobbin up over the gauge bar, up between the 7th and 8th warp threads, under the 7th warp to the left, over the 7th and 8th warp threads. Take the bobbin, from the right of the 8th warp thread, under the 8th warp, and up between the 8th and 7th warps, keeping the yarn from the bobbin up the warp ends to form a loop, then pull the bobbin down to the gauge bar, pulling the knot produced tight. Now put the bobbin under the gauge bar, this is done by "rolling" the bobbin under the bar. At the right of the loom, when one cannot roll the bobbin under the gauge bar, it will have to be taken around the end of the gauge bar. Tie remaining knots.

When making the knots, place the fingers of the left hand under the warp threads, and the thumb of the left hand on top of the warp. Tips of the fingers of the left hand feed the warp threads to the bobbin in the right hand for making the knots. (Pick up as many warp threads with the left hand as is convenient and comfortable.) As the warp threads are used in making the knots, the left hand fingers and thumb will instinctively move along the warp and pick up necessary warp threads. \*(See Technique Sheet for wind-butterfly bobbins.)



Another method is this: Let the left hand remain on top of the warp and pick up the needed warp threads with the middle finger of the left hand. One may control the weft from the bobbin by this method. Color, with a red wax crayon, each 11th and 12th warp threads; this is a great help to keep from making mistakes while tying the knots, and especially useful in checking when one may have tied a knot around 3 warp threads, rather than the two needed for the Ghiordes knot. NOTE: The Ghiordes knot, also is a combination of the slip knot as described under the Soumak weave, which please see, Use 3 tabby shots of one strand of Manning's 3-ply wool between Flossa knot rows, and about 10 tabby shots of three strands of Manning's Rug wool wound on a shuttle, between Rya rows of knots.

CUTTING THE KNOT LOOPS: The gauge bar is two lengths of metal separated along the center. After the knots have been tied, and the tabby has been put in, use a Kutto knife, running it along in the bar slot to cut the loops of the Ghiordes knots. (See "source of supply" list for address and price of the Kutto knife.)

Rya with Korndrall ground uses the same Ghiordes knot for the knot rows, but the Korndrall ground or base between the knot rows is woven with Korndrall treadling, which is given on the woven sample sheet, Rugs may be made just like the woven samples, or the Rya knots may be made long enough to completely cover the Korndrall pattern area. This last remark sounds ridiculous, but often the Scandinavians do just that, using the knotted service\* for bed coverings for warmth to the body, while the underside, or the Korndrall base is used as the right side and is often embellished with embroidery.

Half-Flossa is frequently used for rugs--it is simply a pattern tied with the knots, and a tabby ground of "respectable" yarn surrounding the pattern areas.

When designs are made on graph paper for Rya especially, use the rectangular spaced paper which is mentioned under FALSE FLOSSA, which please see. Regular squared paper is adequate for Flossa design cartoons. (See TECHNIQUE SHEET for Rya design.)

#### No. 11 STUFFER RUG

Two warp beams are required for this Stuffer weave. The "Stuffer Warp" is wound onto the regular beam of the loom. The folio samples were woven on my old Lane loom. I had to add an extra warp beam, and since the measurements of the Lane loom are very similar to the LeClerc loom, I bought, for the extra beam, a LeClerc sectional beam, with a "brake" (ratchet substitute) which fit my Lane loom perfectly. (I bought the LeClerc beam through Hughes Fawcett, Inc.) The brown warp in the sample was wound on this extra beam--this warp is called "Weaving Warp". It is well to wind onto the extra warp beam warp threads twice as long as the warp wound on the Stuffer beam, or the regular beam. The brown "Weaving Warp" shows on both sides of the finished textile, but the Stuffer warp does not show in the finished rug. (See woven sample.) The Stuffer warp, at all times, is kept tight; the Weaving warp must be a trifle slack because it must go under and over the double textile. However, the Weaving warp must never be too loose or the reed will pull forward a too slack Weaving warp and cause loops to form on the surface of the web. It is wise not to have any knots in either warp as knots in 8/4 Carpet Warp will not pass easily through dents of a No. 12 reed. When the warp will not beat close to cover the warp, it is because the Weaving Warp is not sufficiently loose, then the Weaving Warp must be loosened. The "weaving warp" really requires a delicate adjustment at all times. The extra warp beam is released by a cord, but it is often necessary to go to the back of the loom to adjust the tension on this extra beam. It does not work automatically. I threaded the Stuffer warp first on Hars 3&4, and left unthreaded and in correct order, as designated on the draft, the heddles on Hars 1 and 2 through which the brown "weaving" warp would be threaded later. This method was quite satisfactory.

Only two block patterns may be woven on a four-harness loom. Borders or stripes may be woven by using only one color of weft. In Mrs. Atwater's book, HANDWOVEN RUGS, directions are given for 8-Harness designs, as well as pick-up weaving. I did my experimental weaving on two 8 inch Structo looms, turned back to back, in order to get two warp beams, and the experiments were successful. Any two small looms could be used in this experimental work--this is easier than weaving on a large loom. (continued)

(Stuffer, con't)

Should you order an extra beam directions will come with the order. It is not necessary to have a second upright pair of posts to hold the extra warp beam. Brackets are supplied with which to attach the extra beam onto the posts already a part of the loom. The two warps must go over separate cross beams, however. I took the Stuffer warp up over the back beam already on the loom. For a cross beam over which the Weaving Warp was to travel, I used a  $\frac{3}{8}$ " board the width of the loom, and about  $3\frac{1}{2}$  inches wide. (In my case this board was  $3\frac{1}{4}$ " long,  $\frac{3}{8}$ " thick, and  $3\frac{1}{2}$ " wide.) Blocks  $\frac{3}{8}$ " thick and  $3\frac{1}{2}$ " wide and 2" long were set in 1" from ends and nailed to the underside of the long board.  $\frac{1}{4}$ " holes were bored clear through these blocks and the board to receive  $\frac{1}{4}$ " carriage bolts with wing nuts. The carriage bolts needed to be 3" long. A center hole was also bored through the board (no block here) and the regular cross beam. A 3" bolt was used through this hole with a  $\frac{3}{8}$ " nipple between the added board and the regular cross beam to give the board center support. (The nipple or bushing was cut from a  $\frac{1}{4}$ " brass pipe, and was  $\frac{3}{8}$ " high.) IMPORTANT! Before boring any holes, place the new  $\frac{3}{8}$ " board on top of the regular cross piece so that the board will project out over the old beam about  $1\frac{1}{4}$  inches. This will keep the two warps separated. A crude drawing is shown on the technique sheet. Note; The holes at the two ends were bored also through the cross beam already on the loom. BEAT THE WEFT DOWN WELL--try to cover the warp. (See drawing on Technique Sheet.)

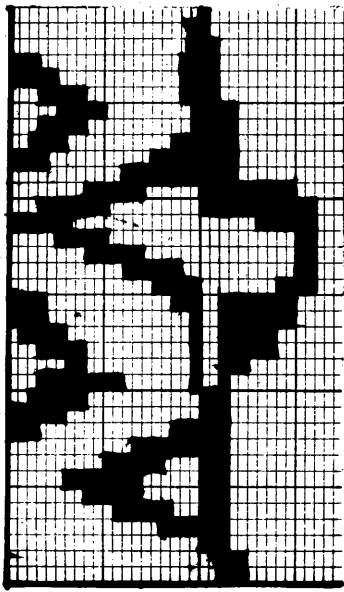
## 12. INDIAN SADDLE BLANKET WEAVE

This is really "bound weaving" on Rosepath threading, so not much more need be added than given on the woven sample sheet. I had the 3 shuttles placed so that the weft shots would come in order. If the colors are the same as I used, start the Orange shuttle from the right, the Gray shuttle from the left, the Brown shuttle from the right of the loom. I cut off the Brown weft after 11 shots, and started the Brown then from the left of loom, the Gray from the left, and the Orange shuttle from the right of loom. After the design is woven, cut off Orange weft, and start the shuttle order from the beginning. Learn to place the shuttles when put down on either side of the weaving so that they will interlock and catch the selvage edges. Tuck in all weft ends, or splice all weft within the weaving rather than have lumps at the selvages.

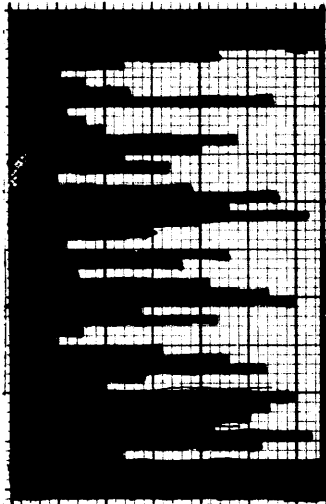
SOURCE OF SUPPLY LIST. ANDREWS COMPANY, Spartanburg So. Carolina for reeds. ROBIN & RUSS HANDWEAVERS 533 Adams Street, McMinnville, Oregon (Linen Rug Warp-8/5, 9/3, etc., Rug Wools, Gauge Bars, Jute, etc.). CHARLES Y. BUTTERWORTH 2222 East Susquehanna Ave., Phila. 25, Pa. GRANT HANDWEAVING SUPPLY CO. Box 178, Provo, Utah (Gauge bars, Yarns, Rug Shuttles, Sectional warp beams, etc.). HUGHES FAWCETT, Inc., Box 276, Dunellen, N.J. (Yarns, Extra warp beams, Shuttles, Looms, etc.). THE COUNTRYSIDE HANDWEAVERS Box 1225 Mission, Kansas (Cowhair/Wool and Rya yarns.) THE MANNINGS, R.D. 2, East Berlin, Pa. (Rug yarns-samples for 10¢. Excellent rug yarns and inexpensive, Gauge bars, etc.). TROY YARN & TEXTILE COMPANY, Pawtucket, R.I. (Excellent, but inexpensive Rug Wools, etc.) LILY MILLS COMPANY, Shelby, No. Carolina (Excellent 8/5 Linen Rug Warp, Carpet warp, and many other yarns. Also Looms.). SEARLE GRAIN COMPANY 365 Grain Exchange Building, Winnipeg, Manitoba, Canada (Linen warp, wool yarns, LeClerc looms and supplies.). TINKLER & CO.,\* (Carpet warps, Jute, and Rug Fillers.). PATERNAYAN BROS., 312 E. 95th Street, New York, 28, N.Y. (Pat-Rug yarns, Persian Rug yarns for Rya, etc.). D.K. DEYRMANJIAN, 245-5th Avenue, New York 16, N.Y. (Persian Rug Yarns for Rya, etc.). GRACE BLUM Box 892, R.R. 1, West Chicago, Ill. (Swedish Cowhair/Wool yarns and Linen Warp for rugs.). ORIENTAL RUG COMPANY 214 So. Central Ave., Lima Ohio (Rayon/Cotton warps and Fillers.). CONTESSA YARNS Box 37, Lebanon, Conn. (Yarns of many varieties.). THOMAS HODGSON, Concord, N.H. (Rug yarns -4-ply-of beautiful quality-inexpensive.). BRIGGS & LITTLE'S WOOLEN MILL, York Mills, Harvey Station, N.B. Canada (Unusually nice wool Rug yarns, and other sizes of wool yarns--Duty on wool yarns from Canada is 15% of the value of yarns, plus 30% for each pound bought, plus 33% Custom's charge, plus Parcel Post charges, yet all in all the cost per pound is very reasonable.). WM. CONDON & SONS 65 Queen St., Charlottetown, P.E.I., Canada (Good Canadian Rug yarns, and other sizes of yarns.). THE KUTTO KNIFE, \$1.25 P.P. from THE MODERN SPECIALTY CO. 4301 Ogden Ave. Chicago 23, ILL. BOOKS from Robin & Russ, and from Boris Veron, Big Sur, California.

\*Tinkler & Co., 237 Chestnut Street, Phila. 6, Pa. BARTLETT MILLS, Harmony, Maine.

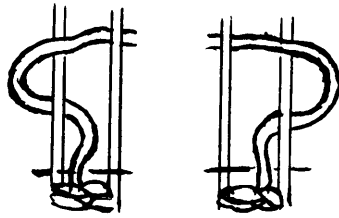
# Technique Sheet



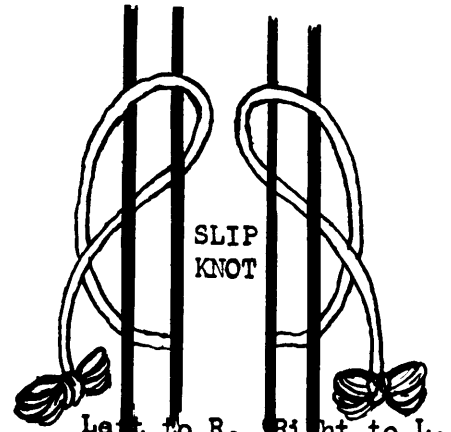
Rectangular graph paper with part of Rya design



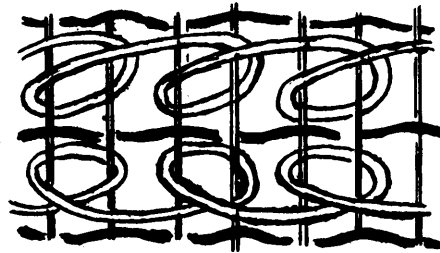
Random design for IMITATION TAPESTRY



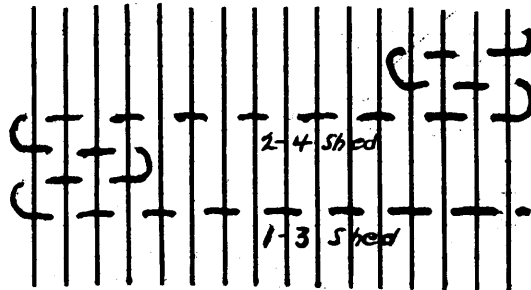
Left Right  
Turning edges for  
SOUMAK  
Figure 3



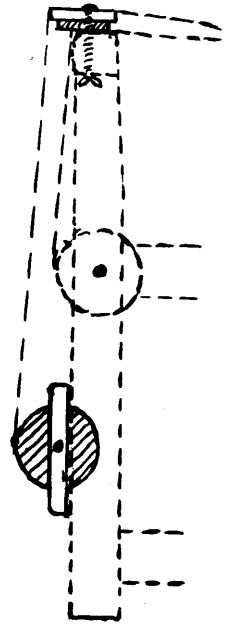
SLIP  
KNOT  
Left to R. Right to L.  
Knot for Soumak Fig.4



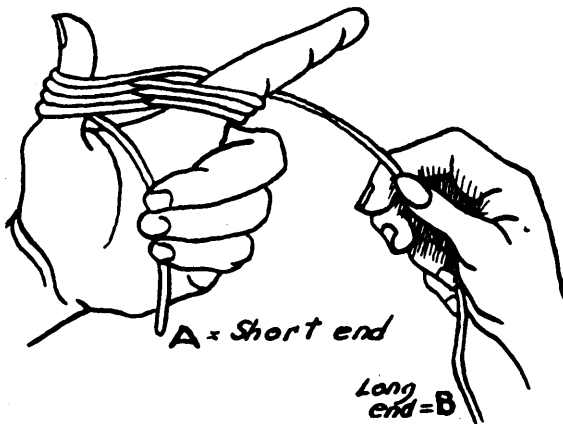
Soumak Construction



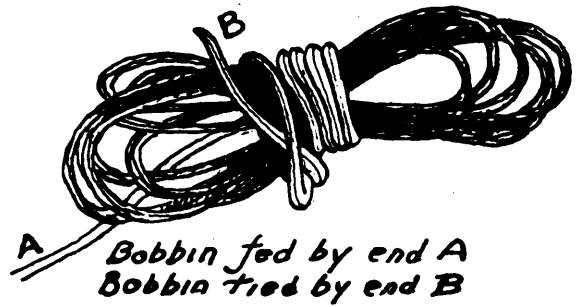
Build-up for Rya, Flossa, False Flossa,  
etc. selvages



Extra warp beam  
mounting on  
single upright



Tying a butterfly bobbin



Bobbin fed by end A  
Bobbin tied by end B

Butterfly bobbin tied

1. DOUBLE KROKBRAGD

Sel.		Sel.	
3	3 3	3	
2	2 2 2 2	2	
1	1 1	1	

Tie-up				
o	o	x	x	o
o	x	o	o	x
x	o	o	x	o
1	2	3	4	5

WARP: Lily's 8/5 Linen Rug Warp(107-A)  
Thread one end in a heddle. Sley one end in a dent of a No.6 reed.

WEFT: 3-ply Paternayan Rug Wool. One strand wound on a shuttle. Four colors were used in the woven sample, (A,B,C,D).

TREADLING: For Tabby, use Hars. 1&3, and 2 alone. For Pattern use chart below.

Har. 1	Har.2	Har.3	
A	B	B	4X
A	A	B	"
O	A	A	"
O	O	A	"
D	O	O	"
D	D	O	"
A	D	D	"
A	A	D	"
B	A	A	"
B	B	A	"



Please see Booklet for further instructions.



2. DOUBLE FACE WEAVE

Sel.	B	A	Sel.
4	4	4	4
3	3	3	3
		2	
	1		

Standard Tie-up

3 X 3 X

WARP: Lily's 8/5 Linen Rug warp-107-A, or Swedish Linen warp (Countryside Handweavers)  
One warp end in a heddle. Sley one warp end in a dent of a No.6 reed.

WEFT: Three colors of Briggs & Little's 6-ply Rug Wool-single strand on shuttles.

TREADLING: Read down the page.

Hars. 1&3-Dark	} X	Hars. 1&3-Light	} X
" 2&3-Light		" 2&3-Dark	
" 1&4-Dark		" 1&4-Light	
" 2&4-Light	} X	" 2&4-Dark	} X
Hars. 1&3-Dark		Hars. 1 &3-Light	
" 2&3-Accent		" 2&3-Accent	
" 1&4-Dark	} X	" 1&4-Light	} X
" 2&4-Accent		" 2&4-Accent	

Repeat "A" to form the square

Repeat "B" to form the square

"Accent" above means a third color used for the small stripe in center of square.

Further instructions are in Booklet.



### 3. ROLLAKAN and AKLAE

**DRAFT:** Twill, or any draft that will produce two true Tabby sheds.

**WARP:** Lily's 8/5 Linen Rug Warp. One end in a heddle, and one end sleyed through a dent of a No.6 reed.

**WEFT:** Swedish Cowhair/Wool yarn, wound double in butterfly bobbins. See technique page in Booklet.

For weft two strands of Troy Rug Wool (see Soumak sample), or 3 strands of The Mannings Rug Wool (see Stuffer rug) may be substituted for the Cowhair/Wool yarn. (Countryside Handweavers.)

Complete instructions will be found in the enclosed Booklet.

Note. Have an even number of warp ends, preferably a number divisible by 4.



### 4. MODERN (Cotton Rug)

44	44	44	44
22	33	22	33
11	11	11	11

Standard Tie-up. Thread 4,3,2,1 for selvages, if desired.

**WARP:** Oriental Rug Co's. 4/4 Rayon/cotton Carpet Warp in Black, and in White.

Warp 6 ends Black 4/4 warp; 6 ends White 4/4 warp. Thread one end in each heddle, regardless on which harnesses the Black and the White warp ends come.

**WEFT:** Oriental Rug Co's. Rayon/cotton 4-ply roving in Black, and White. Wool Rug yarn may be substituted for the cotton yarn.

**TREADLING:** Hars. 2&4-Black Roving  
Hars. 1&3-White Roving

The woven sample is woven a little loosely so that the pattern may be observed. Beat more closely, but do not distort the design. Additional information may be found in the Booklet.

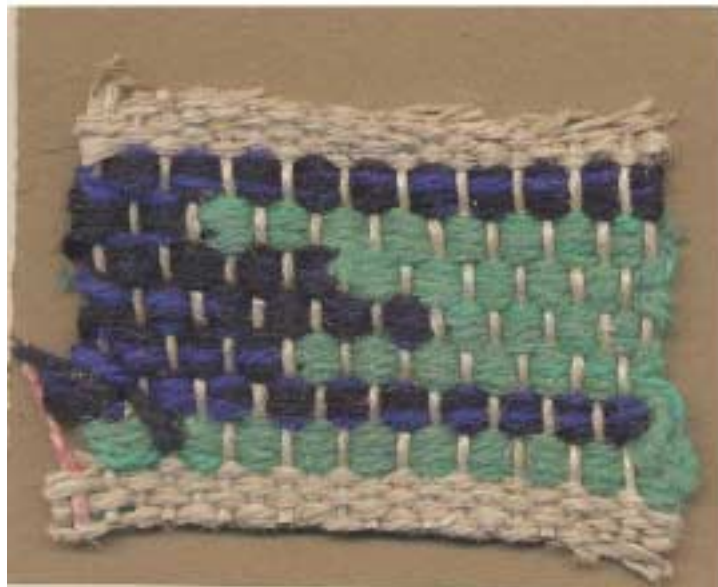
## 5. SOUMAK

**DRAFT:** Twill, or any draft that will produce true Tabby sheds.

**WARP:** Lily's 8/5 Linen Rug Warp(107-A). One end in a heddle. Sley one warp end in a dent of a No.6 reed, or every other dent of a No.12 reed. Have an even number of warp threads divisible by 4.

**WEFT:** Wind into butterfly bobbins 3 strands of Troy Carpet Wool:Dark Red, Red, Pimento, and one strand Manning's Mustard color Rug Wool—all 3-ply yarns. (This is a total of 4 strands of yarn.) Also 2 strands Butterworth 10/2 linen for Tabby between knot rows. The wool weft tends to twist around one another while working; unwind this twist occasionally for a better appearing rug.

For treading and the working process please see the enclosed Booklet.



## 6. IMITATION TAPESTRY (Clasped Weave)

**DRAFT:** Twill, or any draft that will produce true Tabby sheds.

**WARP:** Lily's 8/5 Linen Rug Warp(107-A). One warp end in a heddle; sley one warp end in a dent of a No.6 reed.

**WEFT:** Manning's 2-ply or 3-ply Rug Wool yarn. Wind shuttles with 4 or more strands of the rug yarn (six strands should make a fairly heavy rug). For headings use Butterworth 10/2 Linen yarn, doubled on shuttles.

**TREADLING:** Tabby (Hars. 1&3 and 2&4). The warp is not covered as in some of the other techniques offered in the folio.

Please see Booklet for further information.



## 7. FALSE FLOSSA

Sel.		10 ends				Sel.		Standard Tie-up
		4	4	4	4			
2	2	3	3	3	3	2	2	
1	1					1	1	

Repeat as desired

**WARP:** Butterworth 6 Cord (10/6) cotton twine. Two ends in a heddle, and two ends in a dent of a No.6 reed, or every other dent of a No.12 reed.

**WEFT:** Six or more strands of Troy 3-ply Rug Wool wound on the same shuttle.

**TREADLING:** Use Hars. 1&3 and 2&4 for Tabby headings. For Pattern loops use Hars. 3&4 for Counterbalanced loom. On a Rising shed loom use Hars.1&2.

The weaving process is fully described in the Booklet.



## 8. FLOSSA and HALF-FLOSSA

**DRAFT:** Twill, 4,3,2,1, or any draft that will produce a true Tabby weave.

**WARP:** Lily's 8/5 Linen Rug Warp (107-a). One warp end in a heddle; one end is sleyed in each reed dent.

**WEFT:** Manning's Rug Wool. 3 tones of Red 3-ply, and one strand of 2-ply Black Rug Wool.

The 4 strands are wound into one butterfly bobbin. Wind bobbins with about 18 figure 8's as shown on technique sheet in enclosed Booklet. Do not wind bobbins too large.

Use Troy Rug Wool (medium heavy) for Tabby shots between rows of Flossa knots.

**Gauge Bar:** I used a 3/8 inch gauge bar, but I think a 1/2 inch high gauge bar would be more satisfactory. This would increase slightly the height of the pile, and make for a more secure knot.

**TREADLING:** Tabby for area between knot rows.

Please see BOOKLET for full instructions.





### 9. RYA

**DRAFT:** Twill, or any draft that will produce a true Tabby weave.

**WARP:** Lily's 8/5 Linen Rug Warp(107-A). Have warp set at least 3 inches wider than the desired width of the finished rug. Thread one warp end in a heddle. Sley one warp end in a reed dent of a No. 6 reed, or every other dent of a No.12 reed.

**WEFT:** 3 strands of Paternayan Persian yarn or 4 strands of Manning's Rug Wool, wound into one butterfly bobbin. (Persian yarn was used in the woven sample.) For tabby shots between knot rows, use 2 strands of Swedish Cowhair/Wool yarn, or 3 strands of Manning's Rug Wool, which was used in the woven sample.

**GAUGE BAR:** 1½ inches, or higher.

See Booklet for treading and complete working technique.

### 10. Rya with Korndrall Ground.

	44		44
3	3	3	3
2	2	2	2
11			11

	1	2	3	4	5	6
o	o	x	x	x	o	
o	x	x	o	o	x	
x	x	o	o	x	o	
x	o	o	x	o	x	

**WARP:** Lily's 8/5 Linen Rug Warp. One end in a heddle; sley a No.6 reed with one warp end in a dent. "44" and "11" require, each, two warp threads.

**WEFT:** (for woven sample)Manning's Rug Wool--4 strands(2 Taupe, 1 Tan, 1 Beige). Wind the 4 strands into a butterfly bobbin. For Korndrall ground, or bottom, use Swedish Cowhair/Wool yarn in Amber, Maize, and Yellow--each color wound double on a shuttle, (Countryside Handweavers).

**TREADING:** --for Korndrall ground--  
Treadle 3--Amber, Treadle 2--Amber, Treadle 1--Yellow, Treadle 4 Maize, Treadle 1--Yellow, Treadle 2--Amber. Reading across the page, repeat the 6 shots of the Korndrall treading.

Please see Booklet for weaving process.







See Booklet for further instructions.

### 11. STUFFER WEAVE

10 ends		10 ends	
OO	OO	OO	OO
X		X	
	X		X

Standard Tie-up

B-3 times | A-3 times  
 OO=4 Stuffer warp X=one Weaving warp  
 WARP: 8/4 Carpet Warp. One white, and one Red thread through each "O" heddle. One Brown 8/4 Rayon/cotton Carpet warp thru each "X" heddle. Through a 12 dent reed, sley 4 ends of Stuffer warp in first reed dent. One end Brown Weaving warp through the next reed dent. Repeat. This sleying makes 30 warp ends to the inch. Notice that "A" and "B" are each threaded 3 times.  
 WEFT: Manning's Rug Wool. 3 tones of Blue wound on one shuttle, and 3 tones of Tan wound on another shuttle.

TREADLING: For Tabby headings, use Hars. 1&2, and Hars. 3&4. Pattern "A": Hars. 2&4-Blues, Hars. 2&3-Tans, Hars. 1&4-Blues, Hars. 1&3-Tans. Repeat this 3 times.  
 "B" Hars. 2&4-Tans, Hars. 2&3-Blues, Hars. 1&4-Tans, Hars. 1 & 3-Blues. Repeat 3 times.

### 12. INDIAN SADDLE BLANKET WEAVE

4	4
3	3
2	2
1	1

Standard Tie-up

WARP: Lily's 8/5 Linen Rug Warp. One warp end in a heddle. Sley one warp in a dent of a No. 6 reed.

WEFT: 3 colors of Paternayan Pat-Rug yarn or similar 3-ply Rug Wools.

TREADLING: O=Orange, G=Gray, B=Brown.  
 (Rising shed loom--read across the page.)

Hars. 3&4-O, 1&4-G, 1&2-B, 2&3-O  
 " 3&4-G, 1&4-B, 1&2-O, 2&3-G  
 " 3&4-B, 1&4-O, 1&2-G \*\*\*\*\*

Reverse pattern, using this treadling--

Hars. 2&3-B, 1&2-G, 1&4-O, 3&4-B  
 " 2&3-G, 1&2-O, 1&4-B, 3&4-G  
 " 2&3-O, 1&2-B, 1&4-G, \*\*\*\*\*

Repeat A, then B, to produce the pattern shown in the woven sample.

See Booklet for additional information.

