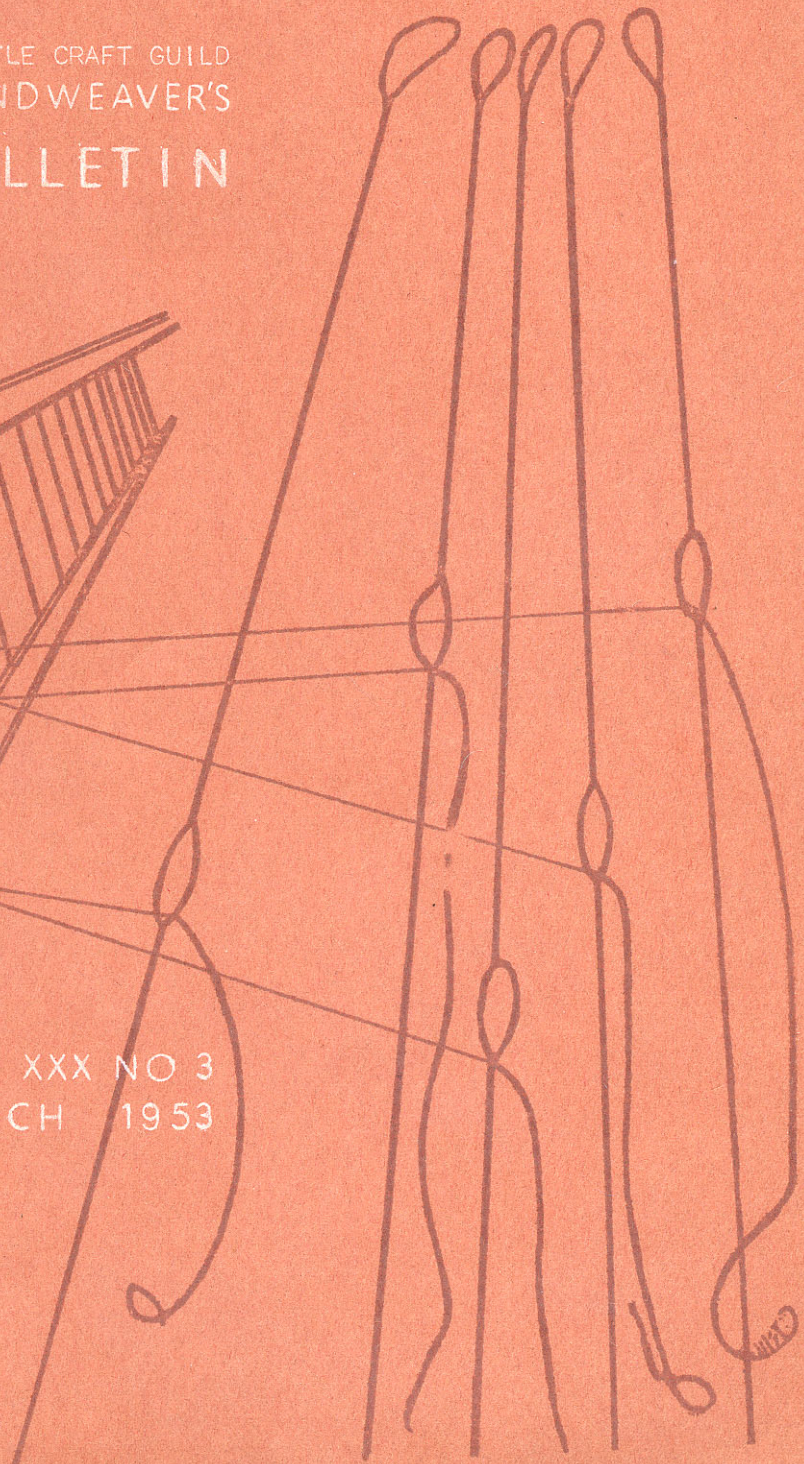


SHUTTLE CRAFT GUILD
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The Shuttle Craft Guild
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The Atwater Lace weave, formerly known as the Bronson Lace, was introduced in the February BULLETIN. This is a weave which was derived from the Spot Bronson and the Swedish Lace weaves but is far more versatile than either one of these. Because the original draft form was suggested by the method the J and R Bronson brothers (1817) used for drafting the Spot weave, even though the fabric resembled the Swedish Lace, Mrs Atwater called this the Lace Bronson. In her later writing, particularly in the revised edition of THE SHUTTLE CRAFT BOOK OF AMERICAN HANDWEAVING, Mrs Atwater called this Bronson 11. However, no weave of this type appears in the old Bronson book, nor in any other publication prior to Mrs Atwater's introduction of it through the Shuttle Craft BULLETINS in the 1920s, so it appears to be one of those rare things, a truly original weave. For that reason, we have proposed that weavers drop the inaccurate and confusing name of Bronson Lace and rename it ATWATER LACE in honor of its originator.

The PROFILE DRAFT

There are several methods for presenting the draft for threading any weave. The first method is the thread-by-thread draft in which every warp end is indicated for a single draft repeat. This method

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must be used for drafts which have any kind of irregularity such as are found in the twill drafts and drafts for the twill derivative weaves in which common threads between pattern blocks or incidental threads or some other restriction of the weave introduces drafting problems. Weaves which are perfectly regular and present no drafting qualifications may be noted by one or another type of shortened draft forms.

On the diagram given in the February BULLETIN draft (12) is a thread-by-thread draft for a simple 4-block, 6-harness Atwater Lace pattern in which each block has 18 threads or 3 repeats of the 6-thread unit, and the blocks are written in twill order. Because of the perfect regularity of this weave, it is possible to shorten this draft to make it easier to write and to read by using the form shown at (14). This draft (14) is identical to (12) but each of the units is given only once, and under each unit is indicated the number of times the 6-thread unit should be repeated. This is a shortened draft form which has often been used by Mrs Atwater. It has obvious advantages in that it requires much less time and paper to write the draft units without having to carry through each unit repeat, thread-by-thread. However, it has the disadvantage that it gives no visual picture of the arrangement and proportion of blocks.

The most visual of all draft forms is the profile draft in which pattern blocks are represented in their exact proportional relationships, and threads which occur at regular intervals are inferred rather than actually drawn. The memorizing of the Atwater Lace unit is a simple matter. It is 6 threads arranged 1, x, 1, x, 1, 2, with the 1 and the 2 harnesses always occurring in this exact relationship and x, or the pattern harness, the only variable. Therefore the x is the only harness which is indicated on the profile draft. Harnesses 1 and 2

are not even shown on the profile draft. The lowest draft line of the profile draft represents the first pattern harness, number 3 for the Atwater Lace, and is called A, meaning that the A pattern blocks are drafted on this line. The second space of the draft represents pattern block B, or harness 4. Thus only two draft spaces are required for writing a 4-harness 2-block profile. If the draft has four horizontal spaces the top two represent blocks C and D or harnesses 5 and 6 of a 6-harness threading, and 6 draft spaces indicate an 8-harness threading.

The profile draft is best written on the usual cross-section drafting paper. The horizontal spaces of the draft represent pattern blocks, the vertical spaces represent groups or units of threads. One square of the profile draft which is to be threaded to Atwater Lace represents the 6-thread unit, 1, x, 1, x, 1, 2. The harness which "x" represents is indicated by the horizontal line on which it occurs. The number of times the unit is repeated is indicated by the number of times the square is repeated. On squared drafting paper the number of squares which a solid line passes through gives the number of unit repeats. If the horizontal square divisions are missing from the draft, as in drafts (16), (17), (18), (19) of the illustration in the February BULLETIN, a figure is placed above each line, telling the number of squares in the line, or the number of unit repeats to make. Thus, draft (15) indicates that three repeats of 1, 3, 1, 3, 1, 2 are threaded first, followed by three repeats of 1, 4, 1, 4, 1, 2, then three repeats of 1, 5, 1, 5, 1, 2, and three repeats of 1, 6, 1, 6, 1, 2, this entire draft repeated for the total threading. This profile draft gives a pattern identical to drafts (12) and (14) and a comparison of these three indicates that the profile is by far the most clear and simple.

The profile draft form is used for other weaving techniques by the substitution of the correct unit.

 FACTS about ATWATER LACE and Its Variations

This is a weave which requires identical warp and weft materials. A singles linen weft may be used on a 2-ply linen warp of the same size. There are a few exceptions to this which will be taken up later.

It is a single color weave. Since one color warp with another color weft are not effective in tabby unless the colors are very closely related or the thread is very fine, two-color effects are not good in Atwater Lace. And the 5-thread floats take on a stringy appearance if woven with a contrasting color. Exceptions will be mentioned later.

If the materials are fine, and the warp setting is quite close, an 8-thread unit may be used instead of the 6-thread unit: 1, x, 1, x, 1, x, 1, 2.

A very fine warp which is closely set may create friction problems because of half the warp ends being carried on the first harness. Although a setting of 36 ends per inch gives no trouble on most looms, a better loom balance may be achieved on settings of 36 or closer by placing the alternate tabby thread on two harnesses instead of one. Use the first two harnesses as the tabby, the third harness as the tie-down, and harnesses from four on as pattern harnesses. Two unit repeats, or 12 warp ends, are then required for one complete threading rotation which becomes: 1, x, 2, x, 1, 3; 2, x, 1, x, 2, 3. The tabby b is harnesses 1-2 and tabby a is 3-4-5-6-etc. The tie-down is harness 3.

A closed weave, similar to Spot Bronson, results if the draft unit is used alone. Therefore, if the characteristic open weave with "windows" is desired, each pattern block must have two or more repeats of the 6-thread unit. The same thing holds true in the weaving, which means that the 6-shot rotation of the weave must be repeated to produce the lace effect.

Atwater Lace is a suitable technique for a wide variety of materials. Although considered a linen weave it may be equally effective in cotton, wool, or other fibers. In fine cottons it gives a pleasant texture for curtains, blouse or dress fabrics or for many other uses while in wool it is excellent for baby blankets, stoles, daveno robes and scarves. It is not particularly desirable for towels. For table mats, table cloths and luncheon, perhaps the technique's most popular use, the effect is disappointing except in linens.

The average, safe warp setting is the one which gives a good, firm tabby weave for the particular material being used. This means about 36 ends per inch for 40/2 linen, 24 per inch for 20/2 linen, 20 per inch for 14/2 linen, 15 per inch for 12/2 linen, etc; 36 per inch for 24/2 cotton, 30 per inch for 20/2 cotton, 20 per inch for 10/2 cotton. Closer warp settings require very severe beating to balance the weave, and give a fabric which is firm, without noticeable open spaces, a texture which is sometimes desirable. Wider warp settings increase the openness of the weave, and these too require careful beating to adjust the perfect balance of the weave. A warp setting which is so wide that the 5-thread floats have a tendency toward displacement is unattractive and poor quality and should be avoided. Wools allow a greater freedom in warp setting than do other materials, and the sley may be chosen according to the effect desired. For instance, Fabri set at 15 ends per inch gives a lovely, soft texture for scarves; set at 20 per inch it gives a light weight, softly draping fabric for stoles; set at 24 per inch it gives a firm, light weight fabric for baby blankets. Only with wool can the weave be distorted (woven without warp-weft balance) to give a good final effect.

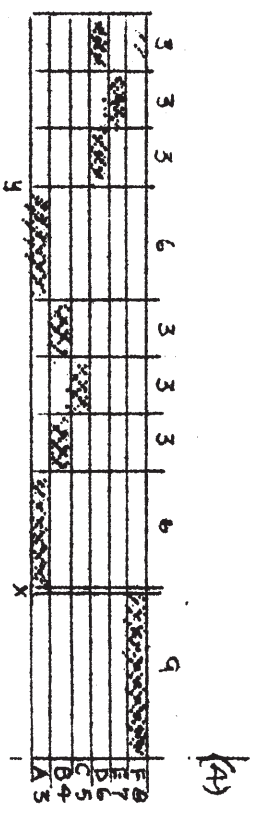
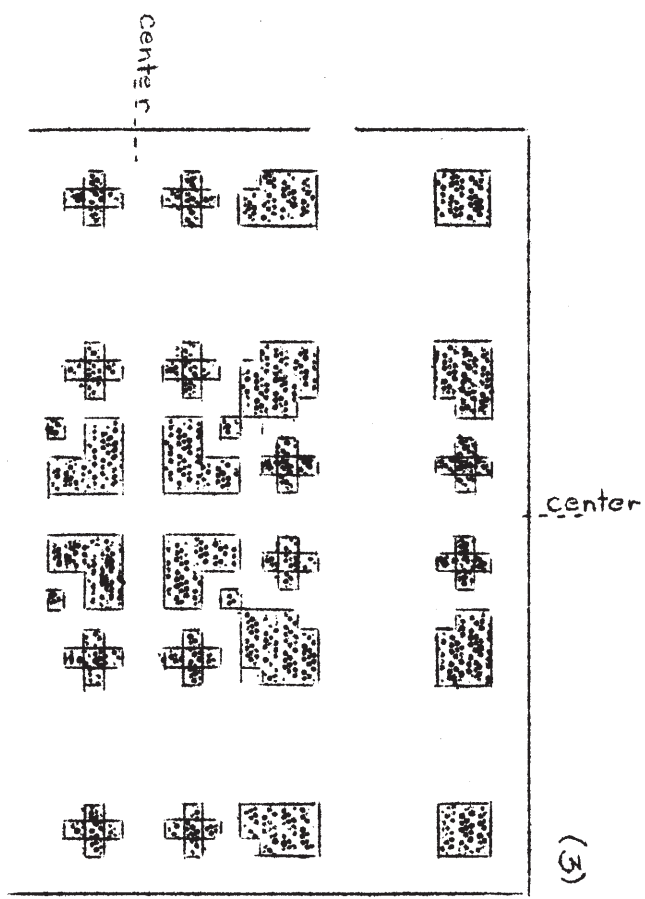
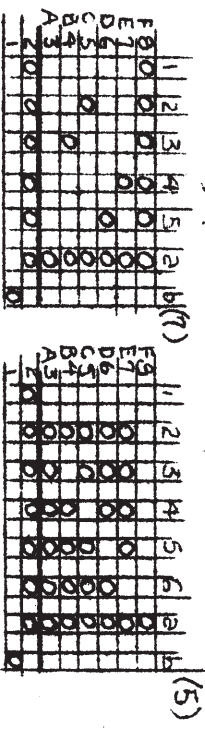
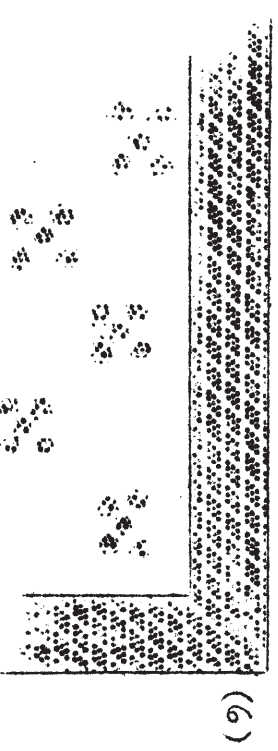
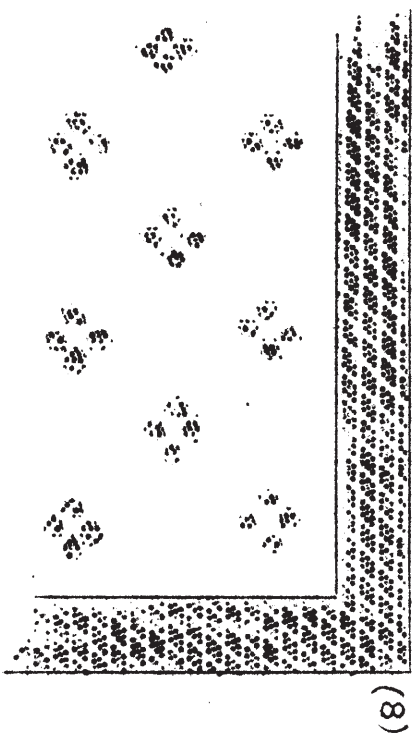
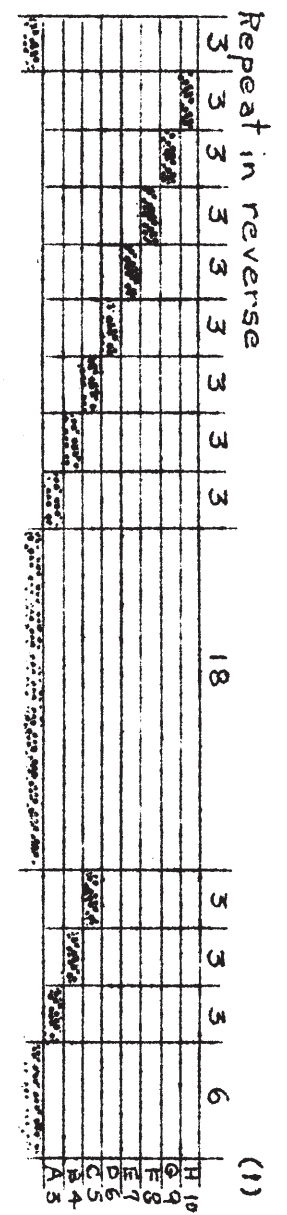
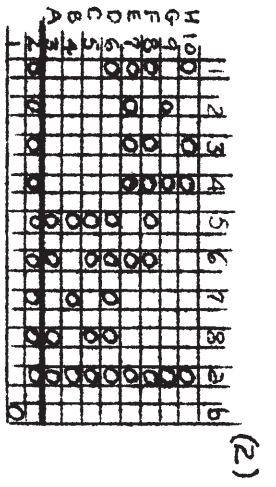
When weaving on multiple-harness threadings, the weaver has a choice of weaving patterns in the lace texture on a background of tabby, or patterns in tabby on a lace texture background. The latter effect is often preferred for two reasons: the tie-ups are lighter and

a more open, lacy fabric is achieved.

Tension difficulties are apt to arise if long areas of the lace texture are woven. Because the open work units are more loosely interwoven than the tabby areas, the take-up in the warp is not as great and the warp in the lace areas, particularly the pairs of warp ends threaded to the pattern harnesses, may develop sag. This effect is very marked with 2-ply linen warps which have no elasticity, is less dominant on single-ply linen warps, and is hardly noticeable on cotton warps. It is not a problem with elastic wool warps. Consequently, when weaving 2-ply linens it is well to weave lace pattern on a tabby background, or to design a pattern of alternating squares of lace and tabby instead of long borders or lines of lace. The difficulty may be temporarily corrected by raising the harness or harnesses on which the offending warp ends are threaded, placing a leash stick or a dowel under the loose warp, back of the harnesses, and pushing the stick to the back beam.

When woven in linen, Atwater Lace should be done in the classical 6-shot rotation given in the February BULLETIN, with exact warp-weft balance.

On cotton warps threaded to Atwater Lace, many variations of the weave may be made to give many striking and unusual effects. A weft-pattern weave may be made to give many striking and unusual effects. Weft-pattern is woven exactly like overshot, with alternating tabbys and each tabby shot followed by a pattern shot. Pattern weft threads will float over 5 warp ends and under 1 across pattern areas, but elsewhere will mix with the tabby to give half-tone background. A full tabby background texture cannot be achieved. Patterns may be developed in the Atwater Lace manner, however, by weaving pattern blocks alone or combined with others. Weft of almost any type (except linen) may be incorporated in weft-pattern



weaving, and the designing may be very free. The pattern weft will form in pairs of shots as in overshot, as the b tabby acts to separate pattern shots and the a tabby to draw two weft shots together. If the pairing is to be avoided, both a and b tabbys must be thrown between each pattern shot. (See PORTFOLIO sample for example of weft-pattern weaving.)

The tie-down harness provides an excellent means for weaving very strong weft color effects. An ornamental or strongly colored weft thread may be inserted in the shed made by raising the tie-down harness alone, and it will float on the surface across the entire warp, held down only by every sixth warp end. Thus, the full intensity of the color, or the full texture of a novelty thread is retained. This tie-down shed is particularly useful when the weaver wishes to incorporate such oddities as metallic braids or loop yarns. (See PORTFOLIO sample)

Again because of the tie-down thread, the Atwater Lace threading makes a perfect basis for weaving Swedish dukagang or Guatemalan inlay. The pattern or inlay thread is carried in the tie-down shed, while the background is woven in tabby, usually with two tabby shots between each inlay.

Slight variations are possible when the weaving is done in the traditional 6-shot rotation. A second closely related color may be used for all shots which are on tabby sheds, while the two shots thrown on pattern sheds are of the same material as the warp. If a strongly glittery fabric is desired, use a metallic for these tabby shed shots. If only a slight glitter is desired, every sixth shot may be of metallic, the shot which falls on the a tabby. (See PORTFOLIO sample)

The Atwater Lace makes a fabric of altogether different effect if the warp is of cotton (mercerized cotton is best, for instance 20/2 set at 24) and set slightly closer than normal, and the weft is of woolen

or worsted yarn a little larger in diameter than the warp. A firm fabric with no open quality is formed by using a firm beat. The weave may be in the traditional 6-shot rotation or with a single shuttle but with alternating tabbys. This makes an excellent fabric for upholstery, sofa cushions and bags of all kinds. The warp may be 2-ply linen if desired.

Mrs Atwater has given a further variation in several back BULLETINS (now out of print) -- a fabric for which the warp must be set very closely to give a complete warp coverage. The resulting fabric is a patterned warp rep of unusual interest.

TABLE MATS in ATWATER LACE

There are several reasons for the great popularity of the Atwater Lace technique for table linens. The weave gives an open, delicate, dainty fabric which looks its best in linen and makes a thoroughly appropriate table covering. It is equally attractive in coarse linens for pottery mats as it is in fine linen for delicate table cloths. Entire unit designs may be made to weave borders around an entire cloth in "picture frame" manner, or corner or center designs. As a one-shuttle technique, the weaving proceeds rapidly and easily.

The four profile drafts for 4, 6 and 8 harnesses given in the February BULLETIN are all planned for table mats, to be woven of 7/1 or 14/2 linen set at 18 ends per inch, 15 inches wide, 272 warp ends, to make final mats about 14 by 20 inches with one inch hems. Two extra warp ends are required beyond those called for in the drafts, these two ends to be threaded at the beginning on harnesses 1, 2, to form a selvage. These two threads are balanced on the left selvage by the final 1, 2 of the last threading unit. They should be added to any planned Atwater Lace threading, even when a wide

tabby border is added, to balance the edges and form neat selvages. Tabby borders, wide selvages, or wide tabby stripes are made by threading 1, 2 alternately for the desired width. These tabby areas cannot properly be shown on the profile draft but are indicated by a square or a bar below the A line of the profile. Any of these drafts may be adapted for finer threads set more closely, or for luncheon squares or table cloths, by proportionately increasing the draft units in each pattern block. For instance, for mats of the same size but of 20/2 linen set at 24 per inch, increase the blocks of the draft (16) to 4, 12, 28, 12, 4, units each.

Mat on draft (16); tie-up (11).

Weave: 2½ inches tabby for hem,
 10 units on treadle 1,
 9 inches on treadle 2,
 10 units on treadle 1,
 2½ inches tabby for hem.

Mat on draft (17); tie-up (11).

Weave: 2½ inches tabby for hem,
 5 units on treadle 1,
 2 units on treadle 2,
 3 units on treadle 1,
 2 units on treadle 2,
 2 units on treadle 1,
 8 inches on treadle 2,
 2 units on treadle 1,
 2 units on treadle 2,
 3 units on treadle 1,
 2 units on treadle 2,
 5 units on treadle 1,
 2½ inches tabby for hem.

There are simple arrangement variations which may be woven on either of these threadings. As is usually the case, the simpler threading (16) leads to the most effective variations. Draft (17) is excellent for

luncheon squares. (Luncheon squares for bridge tables should be set up 36 inches wide. For a full 40 inch square, the warp should be set 43 to 44 inches wide. If the loom will not permit this width, a luncheon cloth in two strips, set 22 inches wide, which is neatly caught together through the center, is quite appropriate.)

Mat on draft (18); tie-up (13), selected treadles.

Weave: $2\frac{1}{2}$ inches tabby for hem,
 5 units on treadle 14,
 3 units on treadle 11,
 3 units on treadle 14,
 3 units on treadle 13,
 9 inches on treadle 14,
 3 units on treadle 13,
 3 units on treadle 14,
 3 units on treadle 11,
 5 units on treadle 14,
 $2\frac{1}{2}$ inches tabby for hem.

This is merely one suggestion. Many variations are possible and may be worked out on squarred paper from the profile.

Mat on draft (19); tie-up shown below.

This is one of the most versatile and charming block arrangements for mats, luncheon squares or table cloths. It may be woven with a border of alternating squares and with corner or center motifs designed in alternating squares. One suggestion for a border and corners in lace squares, with a tabby center is below.

Weave: $2\frac{1}{2}$ inches tabby for hem,
 3 units with harnesses 2-4-6-8 raised,
 3 units with harnesses 2-3-5-7 raised,
 3 units with harnesses 2-4-6-8 raised,
 3 units with harnesses 2-3-5-7-8 raised,
 3 units with harnesses 2-4-6-7-8 raised,
 3 units with harnesses 2-3-5-6-7-8,

Alternate these last two blocks for 9 blocks,
 then reverse the first 4 blocks and add hem.

LUNCHEON SQUARE on Ten Harnesses, by Helen Macdonald.

The very handsome luncheon square drafted at (1) or the supplementary sheet, tie-up at (2), pattern diagram at (3), was designed and woven by Miss Macdonald as part of her thesis problem for the Master Weaver course. She calls the pattern Oak Leaf. The 40 inch square requires 960 ends of 20/2 linen set at 24 ends per inch. It is threaded with a 36-thread tabby border, a 3-block pattern border, then a frame of 72 tabby ends enclosing the center pattern.

Weave: 36 tabby shots, plus turn under, for hem,
3 units on treadle 3,
3 units on treadle 2,
3 units on treadle 1,
72 tabby shots,
3 units on treadle 1,
3 units on treadle 2,
3 units on treadle 3,
3 units on treadle 4,
3 units on treadle 5,
3 units on treadle 6,
3 units on treadle 7,
3 units on treadle 8,
18 tabby shots,
Repeat this entire succession in reverse.

BABY BLANKETS on Eight Harnesses

At draft (4) on the supplementary sheet is given a basic draft for Atwater Lace baby blankets, to be woven of Fabri (or a similar yarn) set at 24 ends per inch. The 9-unit block shown on F, harness 8, is to be repeated at the beginning and the end to make a firm border around the entire blanket. The entire draft for the pattern repeat is from x to the end and the pattern balance is x to y. A warp of 776 ends will be slightly over 32 inches wide and will allow for the 2 9-unit borders, three complete pattern repeats, and the pattern balance. For a wider blanket, 4 pattern

repeats may be made on a warp of 956 ends, for a width of about 40 inches. Or the 9-unit border may be made wider or narrower to adjust to the desired width.

The tie-up at (5) gives the spot arrangement shown at (6) and is treadled as follows for a lace border and a tabby center with flower-figures in lace.

Weave: tabby sufficient for hem,
 9 units on treadle 1,
 6 units on treadle 2,
 3 units on treadle 3,
 3, units on treadle 4
 3, units on treadle 3
 6 units on treadle 2,
 3 units on treadle 5,
 3 units on treadle 6,
 3 units on treadle 5,

Repeat the last 8 treadles for the desired length then add

9 units on treadle 1,
 tabby sufficient for hem.

The tie-up at (7) gives the spot arrangement shown at (8) with a tabby border, the main part of the blanket in lace, and the spots in tabby.

Weave: 54 tabby shots plus hem turn-under,
 6 units on treadle 1,
 3 units on treadle 2,
 3 units on treadle 3,
 3 units on treadle 2,
 6 units on treadle 1,
 3 units on treadle 4,
 3 units on treadle 5,
 3 units on treadle 4,

Repeat these 8 treadles for the desired length, then add 54 tabby shots, plus hem turn under.

Harriet D. Ball