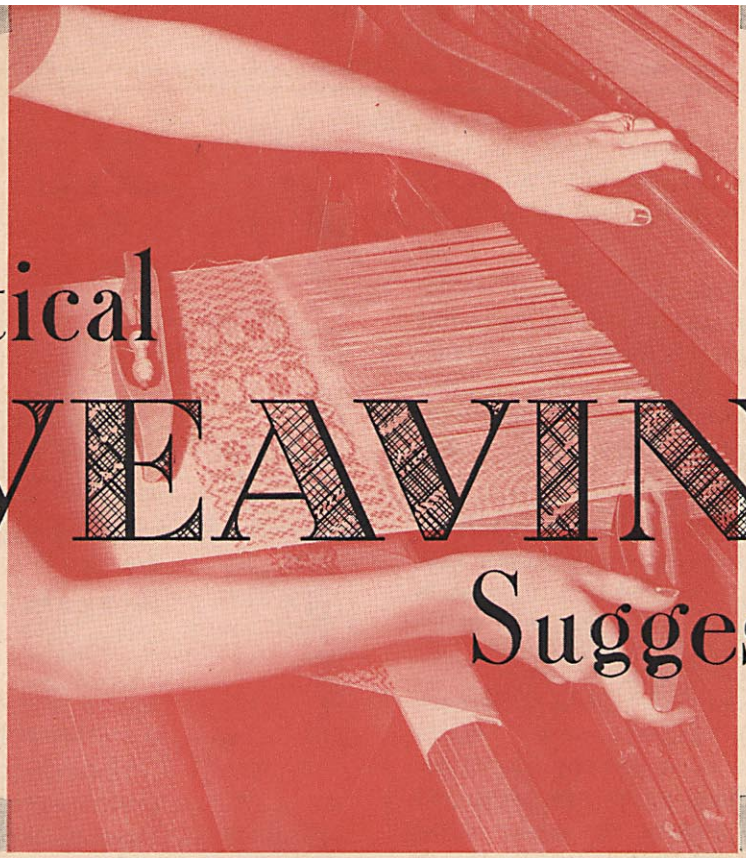

Practical WEAVING Suggestions

Vol. XXIV

Because you've kept this volume of Practical Weaving Suggestions repeatedly in demand, since its publication in 1940, we have found it necessary to reprint it. The unusual information it contains has proven invaluable, to beginners and experienced weavers alike, in determining the type yarn best suited for the purpose it is to serve, the proper weaving procedure and the calculation of the cost of a planned article.

The Arithmetic of Weaving

The arithmetic of weaving is based on yarn count or size, which is determined by definite rules. One must know the count of yarn before he can figure out the amount necessary to weave a given length and width of fabric and to calculate its cost.

The count of cotton is based upon the number of yards that can be spun from a pound of raw cotton. When a pound of cotton fiber is spun into 840 yards of yarn, the size of the yarn which results is known as number one. If a number one cotton contains 840 yards to the pound, a number two would be one-half the size and contain twice as many yards or 1,680. A size three cotton yarn would have 3 x 840 or 2,520 yards, and be one-third as large as a size one yarn. Carrying this further, a size ten yarn would be one-tenth the size of number one and have ten times the yardage or 8,400 yards. A size twelve would have 12 x 840 or 10,080 yards. In the case of plyed yarns, that is, when two or more of any size or combination of sizes are twisted together; the count is reduced to the single equivalent. For example: one pound of 20/2 is equal to one pound of 10/1 in yardage, or 8,400 yards; one pound of 33/4 is equal to one pound of 8¼/1 or 6,930 yards. Cotton yarn sizes are written thus: 1's—a single ply yarn size 1; 20's—a single ply yarn size 20; 20's/2—two single strands of size 20 wound together or a 20 two-ply yarn.

Size of wool yarn varies from cotton in that a number one wool contains 560 yards. When a pound of raw wool is spun into a yarn 560 yards long, one can see that it would be larger than a number one cotton

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spun 840 yards to the pound. Yarn sizes are written in the same manner for wool as for cotton, that is, 5's or 2/4's, but the size varies.

In numbering linen the standard is 300 yards, so that a number one linen thread is the size which results when one pound of raw flax fiber is spun into 300 yards of linen yarn. A number 10 would have 3,000 yards. A 10/2's would have the same yardage as a 5's or 1,500 yards.

Jute or hemp, which are the fibers from which burlap bagging and other rough fabrics are made, are measured like linen as is also ramie or grass linen, a material made from nettle fiber.

Silk and rayon sizes differ from the others mentioned above in that the weight varies with the size of the yarn and the length remains the same. These yarns are measured not in yards but in meters, the meter being slightly more than 39 inches in length. A number one silk or rayon is 450 meters long and weighs one half a decigram. The decigram is another unit of measure, like the meter, not commonly used in this country. It is equal to about 1½ grains in our system of weighing and is generally called a denier. A number two silk or rayon contains the same yardage as a number one, that is, 450 meters, but weighs two denier; a number three has the same yardage but weighs three denier, etc. A table of yarn count is included at the end.

In planning a fabric, one must first decide on the type of fiber best suited to the purpose, then the size of the yarn. To determine the texture of the fabric, it is necessary to decide next on the spacing of the warp ends, that is, the number of threads wanted in each inch of fabric.

As an example let us assume that 15 place mats and 15 napkins are wanted, and that we have decided that the mats should be 14 inches wide by 21 inches long and the napkins 14 inches square when finished. If 20/2 cotton is to be used for both warp and weft we know by experience that 30 ends is a good setf ro this size yarn. With this information it is possible to figure the yarn needed by the following formula.

21 inches — finish length of one mat
3 " — required for two 1 inch hems
24 " — material required for one mat
15 — mats to be woven
120
24
360 inches — material required for 15 mats

14 inches — finished length of one napkin
2 " — required for two narrow hems
16 " — material required for one napkin
15 — napkins to be woven
80
16
240 inches — material required for 15 napkins
360 " — materials required for 15 mats
600 " — total length of finished material
60 " — 10% added for shrinkage
36 " — for loom loss or warp which can not be used
696 " — total length of each warp end. Dividing this by 36 gives us 19 1/3 yards so the warp would be made 20 yards long.

Now to figure the number of 20 yard ends or threads necessary to have a finished width of 14 inches. The amount of draw-in will vary greatly with different weavers and the lateral shrinkage will vary with different yarns. For the purpose of this problem let us assume a total shrinkage and draw-in of two inches. In other words it will be necessary to set 16 inches of warp to secure 14 inches of finished material. At 30 ends to the inch this would require 16 x 30 or 480 ends of warp. As each of these ends must be 20 yards long the total length of warp yarn required would be 480 x 20 or 9600 yards.

If the same yarn is to be used for weft, with perhaps a narrow border in floss at each end of each piece, it would be well to disregard the small amount of weft replaced by floss, as well as the one yard of loom loss, and order the same yardage for weft as figured for warp.

(Continued on Page Eleven)

TABLE OF COUNT

Size No.	Wool	Flax, Jute Ramie, Hemp	Cotton
1	560 yards	300 yards	840 yards
2	1,120 "	600 "	1,680 "
3	1,680 "	900 "	2,520 "
4	2,240 "	1,200 "	3,360 "
10	5,600 "	3,000 "	8,400 "
20	11,200 "	6,000 "	16,800 "

Silk, Rayon, Etc. Size Chart

Yarn No.	Weight	Length
1	1 denier	450 meters
2	2 "	450 "
3	3 "	450 "
4	4 "	450 "
10	10 "	450 "
20	20 "	450 "

Helpful Hints

A Pin Cushion on the Loom

A piece of battle ship linoleum, 1½" x 6", fastened to the upper frame of the loom, makes an excellent cushion to hold pins and needles. A screw hook from which to hang the scissors keeps them within instant reach.

Bobbins

When using paper cops or bobbins in the shuttle, suitable paper is not always at hand. When such is available, cut up a supply. Get the paste jar and go to the bobbin winder. Wind a paper bobbin on it, paste down the loose flap, and wind on a few turns of waste thread to hold it until it is dry. Slip this one off the winder and make another. A three month's supply can be made in a few minutes and—what a grand and glorious feeling when they are ready for use!

Broken Warp Threads

Mending broken threads is a problem to the beginning weaver. Two methods of doing this are in common use. The first is to tie a piece of like thread to the broken end, lead it back through the heddle eye and dent, then fasten it to a pin in the edge of the woven cloth. This end should be darned in when the cloth is taken off the loom but, unfortunately, this is rarely done and a weak spot is left in the goods.

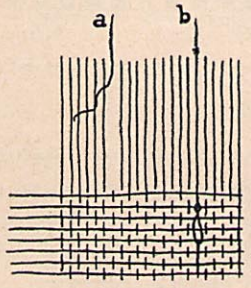


Fig. A—Mending a broken warp thread. (a). The broken thread. (b). Thread with piece added and wrapped around a pin in the cloth.

Fig. A

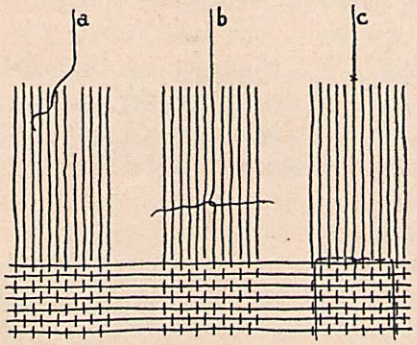


Fig. B

A Swedish book suggests that when the break occurs an inch or more beyond the edge of the cloth as at a, that a piece be added as in Fig. A, then this end be crossed with the broken end from the cloth as at b. This cross is then drawn back to the edge of the cloth (c), a shed is opened and each end is drawn under four or five warp threads on its side of the broken one. The ends are held until a filler thread is put in and they are cut off after five or six shots are made. This splicing will not show in figured goods but does in plain.

Weaving with Doubled Threads

This is often slow and troublesome because one thread feeds off the bobbin more rapidly than does the other and the weaver must be on the alert to take up the slack. Mr. A. B. Gardner suggests taking an ordinary carton, making a hole in the upper end, placing one cone or spool in the carton below this hole, and then leading the thread from this cone up through the hole and on through the center of the other cone which is then set over the hole. The threads from both cones are drawn off together. As this is done the thread from the upper cone winds round and round the one from the lower cone and they go to the bobbin as a single thread. As the thread unrolls in the shuttle the twisted threads come off as a single one with no troublesome slack to watch.

Lace Weaving

Most of our lace weaves belong to the Bronson group differing from the spot weaves in that a unit may be repeated indefinitely. This enables large areas to be woven in which each spot is separated from its neighbors on either side by a series of openings resembling four-paned windows—the lace effect. The spots unite to form ridges on the surface of the cloth. (See Fig. 4, b.) Figure 1 has been drafted to bring out the characteristics of the weave. It shows half of the warp threads arranged alternately upon harness 1; seven-thread pattern blocks, A, A, B, B, separated from each other by three-thread tabby blocks, a, a, a; and a separate harness for each pattern block. When woven, the openings occur at the tabby blocks, the

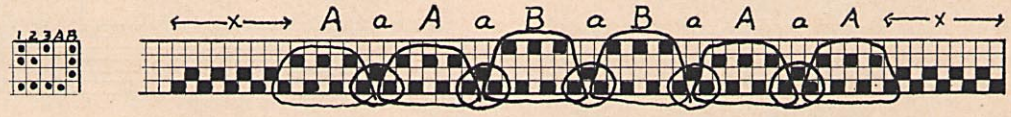


Fig. 1. Type draft. A, B, pattern units; a, tabby blocks; x, plain weave threading.

warp ends of harness 2 making the vertical bars in the "windows." To secure these openings the smallest size in which a group of pattern blocks may be written is one of two groups of seven threads each, separated by a three-thread tabby block and surrounded by plain weave. This will make a single row of the characteristic "windows." A single seven-thread block will have deformed half-windows on each side of it.

Figure 1 also shows that on four harnesses we are limited to two-block patterns. The general rule is that a lace weave pattern requires two harnesses plus one more for each block in the given pattern. Hence, for a four-block pattern, six harnesses are required. Etc.

A block may be repeated over and over to form a composite block of any desired size. For example, Figure 2 is the threading draft for a doily or a runner having plain weave borders two and a half inch wide on each side of a lace weave center eleven inches wide. This requires but three harnesses and is woven with a single shuttle on three treadles. (487 ends of Lily 20/2 cotton or No. 20 Pearl set 30 to the inch with a filler of white, yellow, or blue, is very attractive.)

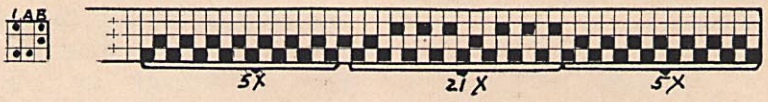


Fig. 2. Threading draft for doily or runner in lace weave.

The tie-up for lace weave is simple. (See Figure 1.) Alternate warp threads are on harness 1 and this is tied alone to one tabby treadle, A. The other half of the warp threads are spread over the pattern harnesses alternating with the warp ends on harness 1; hence, to get the other tabby shed, all of the pattern harnesses must be tied to the other tabby treadle, B. Tabby in lace weave does not mean the use of another shuttle carrying a weft different from the pattern weft as in overshot weaving. It merely refers to the treadles used for plain weave.

Block A is made by threads on harnesses 1 and 3 and these must be tied together to a pattern treadle, No. 2. Block B, on harnesses 1 and 4, is tied to another pattern treadle, No. 3. To weave blocks A and B at the same time they are combined on another pattern treadle, No. 1. In this, as in all weaving, the individual weaver may rearrange the order of the treadles to suit his convenience.

When treadle 1 is down (See Fig. 2) harness 2 carrying every eighth thread in the lace weave part is up and the weft makes seven-thread skips over the warp threads on harnesses 1 and 3 in that part of the pattern and passes over alternate threads in the plain weave. When treadle B follows treadle 1 it brings down the alternate warp threads for the plain weave on the borders. In the lace weave parts of the fabric these successive shots of weft on treadles 1 and B float over the warp ends on harness 3 and do not interweave with them. As a result these warp ends form skips on the under side of the cloth opposite the weft skips on the upper side. If more than six shots are put in without a binding thread, the increased length of these skips weakens the cloth unduly. To prevent this, treadle A (harness 1 alone), permitting a weft shot to pass **under** the warp ends on harness 3 and so to tie them down, follows the sixth shot. Thus the treadling for this doily becomes;

A—1X, B—1X — This makes plain weave across the cloth. Repeat until end border, plus hem allowance, is woven.

(1—1X, B—1X) 3X; A—1X, B—1X — Repeat as desired to form lace weave center.

A—1X, B—1X — End border, as above.

A two-block pattern is naturally more complex. (See Fig. 1.) To treadle A, B, A, B, A, B, etc., gives plain weave over the whole width. 1, B, 1, B, 1, B, A, B, repeated, weaves a solid lace center with plain weave borders. 2, B, 2, B, 2, B, A, B, and repeating, will give plain weave everywhere save where the 1-3 blocks are threaded and will make lace weave there. Likewise, 3, B, 3, B, 3, B, A, B, repeated, gives lace weave under the 1-4 blocks, plain weave elsewhere.

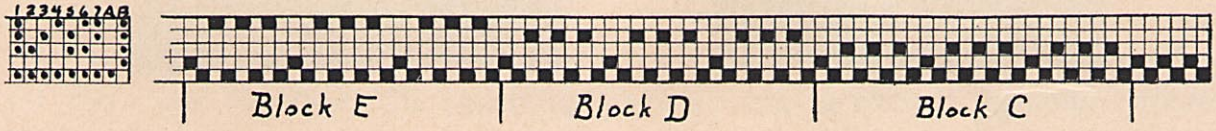
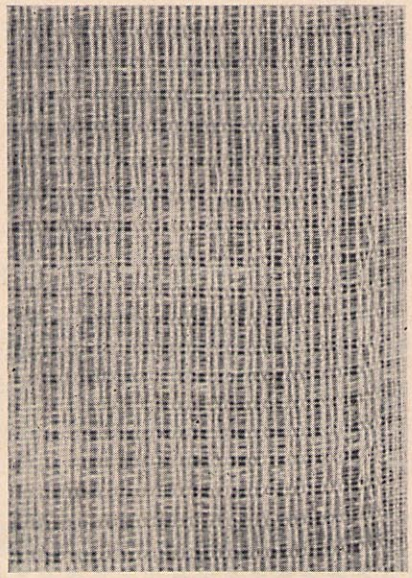


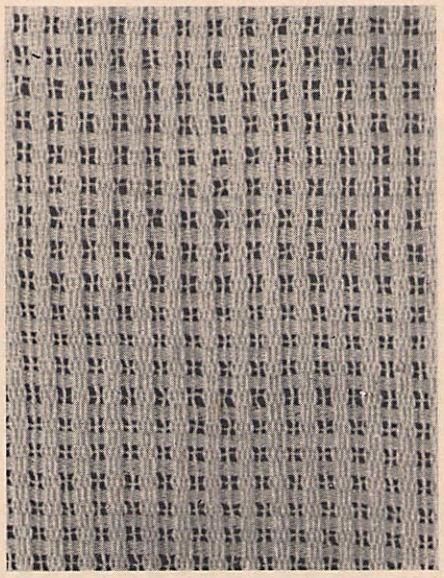
Fig. 3. Type draft to show tie-up.

A three-block pattern more than doubles the possible combinations as shown in the tie-up in Fig. 3. As in previous cases A, B, A, B, A, B, repeated, weaves plain weave over the whole cloth. 2, B, 2, B, 2, B, A , B, repeated, gives plain weave everywhere save for lace weave on the C blocks. 3, B, 3, B, 3, B, A, B, does the same for the D blocks, and 4, B, 4, B, 4, B, A, B, does it for the E blocks. 1, B, 1, B, 1, B, A, B, repeated, combines these three blocks and weaves a solid lace center with plain weave on each side. 5, B, 5, B, 5, B, A, B, combines blocks C and D with plain weave over all else. Likewise, 6, B, 6, B, 6, B, A, B, weaves blocks C and E at the same time, and 7, B, 7, B, 7, B, A, B, combines blocks D and E.

By treadling one block repeatedly, or combinations of blocks, stripes are made. For example, 2, B, 2, B, 2, B, A, B, repeated over and over makes a lengthwise stripe where block C is threaded. Or by weaving any of the combinations for the proper distance, then bringing in plain weave, squares or rectangles may be put in. A checked pattern may be secured by weaving stripes crossed at the proper intervals by strips of lace weave upon 1, B, 1, B, 1, B, A, B.

Linens, silks, and cottons give good results with this weave, Pearl cotton being very attractive. 20/2 cotton or Pearl 20 is usually set 30 to the inch and there should be as many shots of the same size filler put in. Beating must be light wherever the lace weave predominates or the open lace work will not show well. To illustrate: if the center is solid lace weave surrounded by plain weave borders two inches wide, the end border in plain weave is beaten as usual. But when the central part is reached, the two-inch borders are really most of what is being beaten since the lace weave center offers but little resistance to the beater. Naturally one should not beat a four-inch strip nearly so hard as a twenty-inch one. The floats of the weft must not be pounded together. If the beater is heavy, the blow is more of a pull than a blow. The density of the side borders in plain weave should be the same as that of the end ones.





With most yarns the four-spot open effect shows poorly on the loom but is enlarged and cleared up by washing the goods. (See Fig. 4.) The photograph is of a piece woven in 20/2 cotton both ways. The threads of the seven-thread skips that were loosely woven, bunch together when wetted and so open up the four-spot windows.

Either side is the right side but the one with the warp rep is usually the more attractive.

By taking advantage of the combinations as suggested above, many beautiful designs may be worked out. The weave is suitable for luncheon sets, table covers, wall hangings, etc. The discussion here is elementary.

Lily's Weaving Chart

THREAD SETTING

Cotton furnishes us with threads of many sizes and textures. Those who use threads for sewing, crocheting, knitting or weaving should know just where each thread will serve to the best advantage and yield the most satisfying results. It is only thus that we can hope to produce hand-made articles of convincing loveliness, and repay us for time spent creating and for money invested in threads.

In weaving especially, very pleasing results are possible if the right thread is chosen for the right setting. If warp threads are set too far apart for their size, the weft slips between them and the resulting material is too loose for practical purposes, and will not survive laundering. If warp threads are set too close together, the resulting fabric is ridgy with weft threads concealed and too much warp showing. Every warp thread gives best results when threaded for what might be called a perfect tabby setting. This chart has been prepared to aid the weaver in finding that best threading, or just the right number of threads per inch to make perfect tabby.

In a perfect tabby rendering of a thread, both warp and weft are of the same material or the same size material. If the warp is properly set, the resulting fabric will have as many weft threads per inch as there are warp threads per inch, and the lay of the threads will be perfectly balanced always, with tiny squares between interlocking warps and wefts. For every thread also, there may be a loose-mesh tabby and a closely woven tabby, the setting varying by a dent or so more or less per inch. The weaver regulates his beating to obtain the same number of weft threads.

COLOR, YARDAGE, ETC.

The color range of a thread is also important to the weaver. If he can see at a glance how many colors or shades he can choose from, he can plan a more subtly attractive article. It is important too for him to know how many yards come in a pound of each kind of yarn. He can then plan his piece to a certain size, and be sure of finishing with enough material. All this information is given in the following chart, as well as the most popular uses for each kind of thread listed.

Lily's Weaving Chart

The threads below are listed in the order given on Lily's Price List.

Art. No.	Name of Thread	Yards Per Lb.	Yds. Per Spool	No. of Colors	Setting for Tabby	Use As Warp and Tabby Weft	Use As Pattern Weft
Art. 114 Lily Mercerized Pearl Cotton and Floss	Pearl Size 3	1260	2 oz. 158	70	12 to 15	Warp in Blankets, Belts Bags, Coats, Drapes, Heavy Linens, Hot Mats, Portierres.	Weft in Purses, Heavy Coverlets, Drapes, Runners, Couch Throws.
"	Pearl Size 5	2100	2 oz. 262	70	16 to 18	Belts, Medium Texture Coverlets, Luncheon Sets, Drapes, Book Covers.	Purses, Bookmarks, Coverlets, Dress Trim, Vase Mats, Towels, Pillows.
"	Pearl Size 10	4200	2 oz. 525	70	22 to 24	Lunch Cloths, Guest Towels, Sun Curtains, Coverlets, Screen Covers, Fine Belts.	Bookmarks, Fine Dress Trim, Dress Material, Vanity Sets, Lace Doilies.
"	Pearl Size 20	8400	2 oz. 1050	70	30 to 32	Sun Curtains, Table Doilies, Luncheon Cloths, Dresses, Summer Neckties, Bell-pulls.	Use as single weft in Lace Weaves.
"	Floss	2240	2 oz. 280	70	20 to 24	Drapes, Scarves, Texture Weaves. Use preferably as weft.	Finger-Weaves, Drapes, Purses, Pillows, Silky Mats, Panels, Decorative Squares.
Art. 214 Mercerized Cotton Yarns	Size 10/4	2100	2 oz. 262	5 White Tones	16 to 18	Upholstery, Drapes, Footstool Covers, Bath Mats, Hot Mats, Coat Materials.	Drapes, Coat Materials used as single weft.
"	Size 12/4	2500	2 oz. 312	5 White Tones	18 to 20	Upholstery, Drapes, Chair Seats, Laundry Bags, Skirts, Trousers, School Bags.	Drapes, Skirts, Coats and Chair Seats used as single weft.
"	Size 16/4	3360	2 oz. 420	5 White Tones	20 to 22	Upholstery, Heavy Imitation Linen, Coats and Trousers, Luncheon Cloths.	Drapes, Coats, etc., used as single weft.
"	Size 20/4	4200	2 oz. 525	5 White Tones	22 to 24	Chair Seats, Upholstery, Imitation Linen, Coats and Dress Material, Drapes.	Drapes, Linens, Dress Materials, and Coats used as single weft
"	Size 20/3	5600	2 oz. 630	5 White Tones 23 colors	22 to 24	Twill Towels, Upholstery, Half Linens, Drapes, Flags, Handbags, Belts, Mantel Runners.	Half Linens, Twill Towels, used as single weft. Make use of colors.

Lily's Weaving Chart

The threads below are listed in the order given on Lily's Price List.

Art. No.	Name of Thread	Yards Per Lb.	Yds. Per Spool	No. of Colors	Setting for Tabby	Use As Warp and Tabby Weft	Use As Pattern Weft
Art. 214	Size 24/3	6700	838	5 White Tones	28 to 30	Coverlets, Pillows, Runners, Luncheon Sets, Sun Curtains, Dress Materials, Fine Upholstery.	Single Weft in Twills and Texture Weavers.
"	Size 30/3	8400	2 oz. 1050	5 White Tones	30 to 32	Coverlets, Pillows, Sun Curtains, Dress Materials, Table Cloths, Aprons, Dresses, Blouses.	Too fine for Pattern Weft, except as Single Weft for Fine Twills and Variations.
Art. 314 Lily Cotton Warp Yarns	5/2 Natural	2100	2 oz. 262	Natural Only	16 to 18	Bath Towels, Heavy Imitation Linens, Coats, Skirts, Jackets, Hangings, Knitting Bags.	For Pattern Weft, use this size in many lovely colors in Art. 114.
"	10/2 Natural 10/2 White 10/2 Mer. Nat. 10/2 Mer. White	4200	2 oz. 525	4 White Tones 24 Colors	24 to 26	Drapes, Sun Curtains, Upholstery, Pillows, Medieum weight Dress Goods, Guest Towels.	Dress Materials, Towels, Bookmarkers, Aprons, Borders in Doilies, Drapes.
"	20/2 Natural 20/2 White 20/2 Mer. Nat. 20/2 Mer. White	8400	2 oz. 1050	4 White Tones 24 Colors	30 to 32	Fine Coverlets, Sun Curtains, Tablewear, Vase Mats, Bureau Scarves, Buffet Sets, Fine Dress Materials, Plaid Luncheon Sets.	Colored Single Weft for Towels in Twill Variations. Make use of colors in stripes and plaids.
"	20/3 Natural 20/3 White	5600	2 oz. 700	Nat. & White	22 to 24	Medium-weight Towels, Luncheon Sets, Sun Curtains, Half-Linens.	For Pattern Weft, use this size in many lovely colors in Art. 214.
"	24/2 Natural 24/2 White	10,000	2 oz. 1250	Nat. & White 24 Colors	36 to 38	Fine Table-Wear, Vanity Sets, Buffet Sets, Fine Dress Materials, Sun Curtains, Lace Weaves, Finger-tip Towels.	Too fine for Pattern Weft, except as Single Weft in very fine Twill, Linen Imitations.
"	16/3 Natural Egypt	4480	2 oz. 560	Natural Only	22 to 24	Half - Linen Towels, Heavy Coverlets, Purses, Knitting Bags, Wall Hangings.	Single Weft in Texture Weaves of Towels and Imitation Linens.
"	16/4 Natural Egypt	3360	2 oz. 420	Natural Only	20 to 22	Drapes, Portierres, Heavy Coverlets, Coat Materials.	Single Weft in Texture Weaves of Towels and Imitation Linens.

Lily's Weaving Chart

The threads below are listed in the order given on Lily's Price List.

Art. No.	Name of Thread	Yards Per Lb.	Yds. Per. Unit	No. of Colors	Setting for Tabby	Use As Warp and Tabby Weft	Use As Pattern Weft
Art. 414	Lily Carpet Warp	1600	½ Lb. 800	16	12 to 16	Rag Rugs at 12 per inch. Pattern Rugs at 16 per inch. Bath Mats, Hot Mats, Portierres.	Used as Single Weft in Coarse Tabby and Twill Materials. Use colors for coarse textured plaids.
Art. 514	Lily Stranded Filler	Approx. 800	2 oz. skein 100	16	Use as Filler Only	Excellent Tabby for Heavy Rugs, also Swedish Flossa Rugs.	Bath Mats, Knitting Bags, Heavy Purses, Hot Mats, Pot Holders.
Art. 614	Lily Rug Yarn		4 oz. skein	16	Used as Rug Filler	———	Rugs, both Pattern and Rag Rugs. Handsome effects possible.
Art. 714	Lily Three-Strand Mercerized 10/3	2800	2 oz. 350	29	16 to 18	Belts, Double Weave, Book Covers, Table Mats, Handbags, Drapes, Girdles, Tie-backs, Pot Holders.	Coverlets, Upholstery, Bookmarks, Pillows, Mantel Runners, Dress Goods.
Art. 814	Lily Rug-Weave Yarn	Approx. 530	3 oz. 100 Yds.	28	Used as Filler	Very heavy Tabby for Rugs, Bath Mats, where Flossa loops occur.	No-Tabby Rugs, Bath Mats, Hot Mats, Chair Seats, Outdoor Cushions, Pillows.
Art. 914	Lily Six-Strand Filler, 20/6	2800	2 oz. 350	20	16 to 18	Towels, Belts, Waffle-Weave Doilies, Drapes.	Finger - Weave Designs, Wall Panels, Draperies, Bags, Portierres, Soft Couch Throws, Imitation Linens.
Art. 1014	Lily Four-Strand Filler	840	100	28	Used as Filler	Good Tabby for Heavy Rugs. Stripes for Seat Mats, Outdoor Pillows, Heavy Hangings, Hot Mats, Under-arm Bags. (Use colors).	Hot Mats, Bath Mats, Portierres, Wall Hangings, Heavy Purses, Rugged Seat Covers, Car Mats.
Art. 110	Lily Weaving Yarn	4200	2 oz. skeins 525	41	Used as Filler	———	Used as Weft for Runners. Table Mats, Tapestries, Wall Hangings, Baby Blankets, Scarves, Neckties, Dress Materials, Finger Weaving, Cushion Tops, Coverlets, Couch Throws.

ARITHMETIC OF WEAVING
(Continued from Page Two)

Therefore a 50-50 weave (the same number of warp and weft threads to the square inch) would require 9600 yards for warp and 9600 yards for weft. The total 20/2 cotton to order would therefore be 19200 yards. Dividing this by the 8400 yards in a pound of this size yarn converts the yardage needed into 2 2/7 pounds. As this yarn is available in 1 pound cones and 2 oz. tubes it would be necessary to order two of the 1 pound cones and three 2 oz. tubes to be sure of the yardage required.

To carry this problem just a little further, what would be the method of figuring if these pieces were to be in an overshot pattern using the 20/2 for tabby and Lily No. 5 Pearl for pattern. The accurate way to figure the weft required would be to get the warp on the loom and weave four inches with left over yarn of desired size. Then count the number of tabby and pattern picks used — multiply by the number of four inches of weaving required — then by the length of each weft pick. However, this is a method that is seldom used as most weavers would not want a warped loom standing idle while waiting for the pattern and tabby yarn to arrive. A very rough way of estimating this so that all yarn can be ordered at one time is quite simple. Just divide the amount needed for plain weave weft by two and add 5% to each half for safety. In the above problem we found 9600 yards were required for weft. Half of this would be 4800 yards. Adding 5% for that safety factor gives a figure of 5040 yards. This would be the number of yards needed for both 20/2 tabby and No. 5 Pearl pattern weft. To place the order it would be necesary to convert these yardage figures to the number of cones or tubes needed to furnish this yardage. With the help of the Lily Weaving Chart we find that two 1 pound cones and three 2 oz. tubes of No. 5 Pearl would contain 5986 yards which with the safety factor is near enough to the yardage needed. Again from the chart we find that five 2 oz. tubes of 20/2 must be ordered.

As this is just an estimate, and with a margin of safety added, there will probably be yarn left over. However, with so many variable factors it would be impossible to figure the exact yardage, and it is important to order at one time all yarn needed for a weaving project. If colored yarn is being used it should all come from one dye lot, for in spite of careful control there is a possibility of slight variation in shade which can only be seen when woven in next to the other yarn. It is also very discouraging to have the loom idle while waiting for a small order so that the work can be completed. The active weaver will always find use for left over yarn.

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