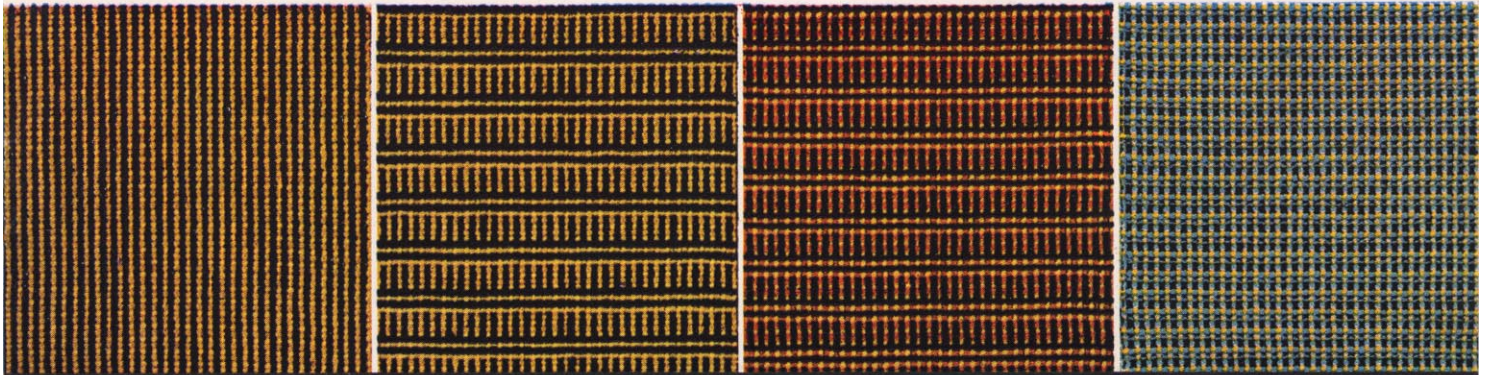


PRACTICAL WEAVING SUGGESTIONS

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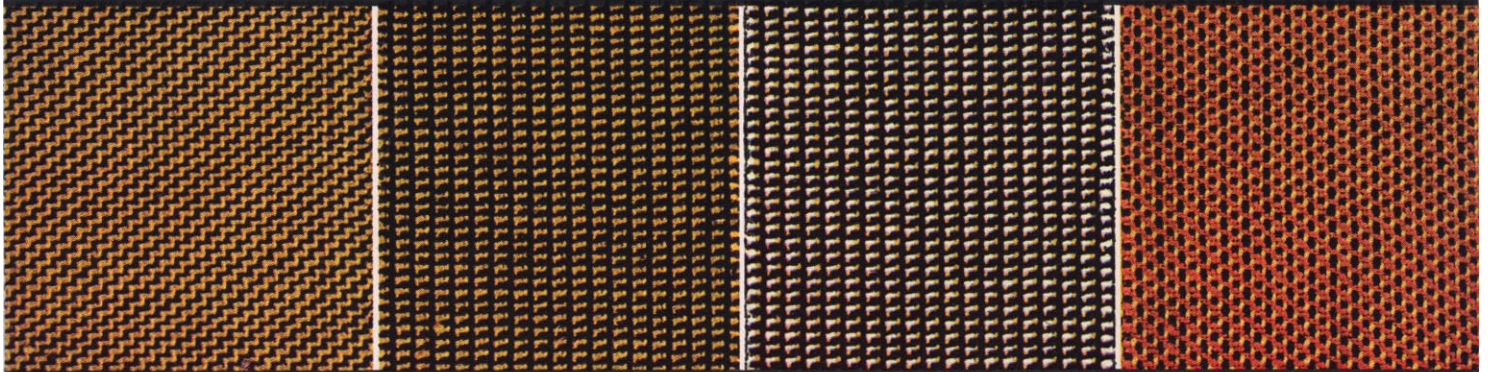


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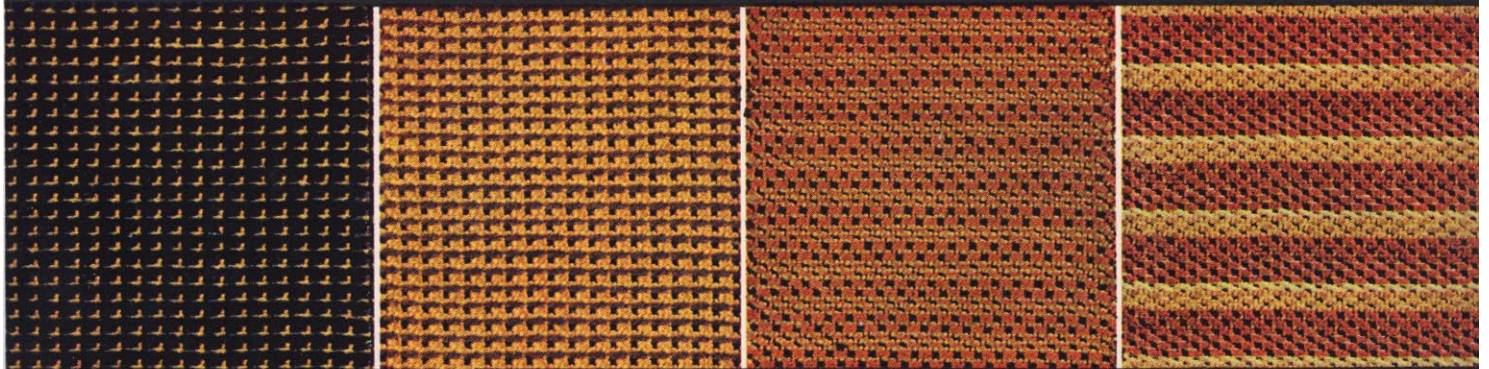


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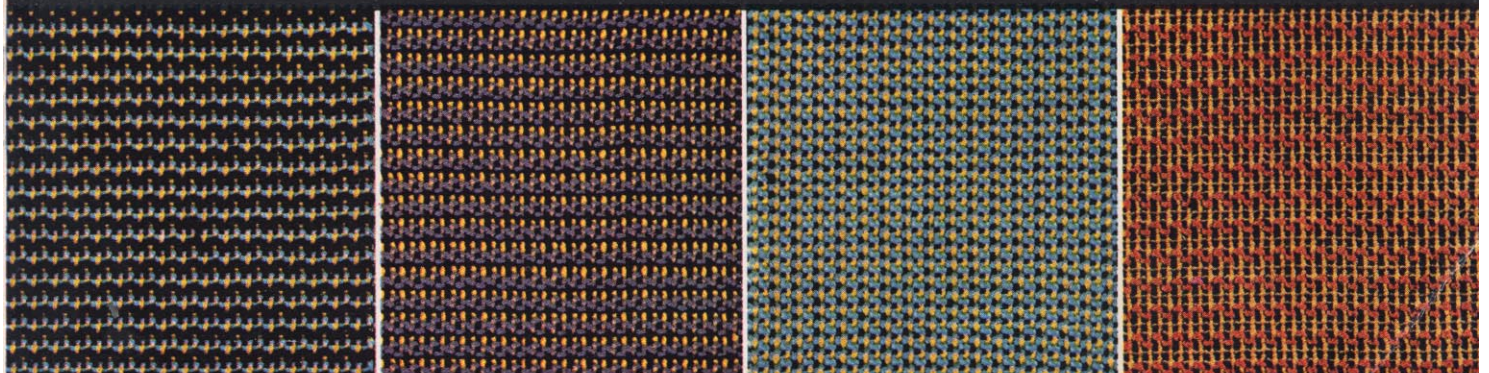


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SAMPLES OF YARN WEAVE AND COLOR

Designed by Lili Blumenau

The handweaver, as designer and craftsman, invents ideas in yarn and color, a process discussed in some detail here, and also actually makes the cloth. The sixteen original samples shown may help you, but the real excitement comes in your own construction of a fabric. However, no matter which direction your inclination goes - creation or production - the experienced weaver enjoys exploring old and new constructions. Handweaving is a creative skill in which all need technical hints to bring out qualities, in even the best yarns, through weave and color combinations of other weavers and teachers.

Inspirations come from many sources. Perhaps an idea will begin directly with yarns like the many novelty materials from Lily Mills. And, in the case of new materials, the weaver gets a purer start than in the inspiration, for example, of exhibition fabrics. Yet an exhibited fabric will make the designer sit down and originate. His fabric will not be a copy, of course, and the worthwhile displayed textile is always the classical and reliable source of stimulation to further creation.

From beginning to end, in weaving, we need inventive ideas. But especially we want all the professional weaver can teach us of principles of design - weave-interlacing, yarn-and-color hints - born of experience.

The samples I have prepared were not created to represent design versatility, but as starting points for you to develop. Each pattern is done in yarns which you may vary in many other colors. To advanced weavers the samples shown may not seem new, but no doubt a few of you will find creative ideas in them, the pictures and the text. The ideas are not specialized for one type of fabric and may be used for decorative as well as apparel textiles.

First I would like to give you some general idea of what I have learned of yarn-weave, or interlacing, and color through considerable designing and teaching experience. I would like to begin with thread, or yarn - the material.

YARN

You are first of all interested in the natural surface of a thread, the qualities it suggests. The look of wool is soft, dull, sometimes heavy, and radiates warmth. Weavers who make a point of imaginative study of fiber qualities see new design purposes in them. It is the seeking which discovers original qualities and uses.

Cotton, in its raw stage, is dull and fluffy - it has none of the warm and heavy look of wool. In the light and airy character of cotton the weaver finds ideas for inventions of his own. In linen thread he finds still others and observes a quality of stiffness, in which he feels and imagines the source of the fiber as it was in the dry stalk of the natural plant.

Analysis of surface effects in yarn and fiber usually is followed by study of their construction. Twist and composition of yarn is of two classes: plain or straight, and irregular or novelty constructions, both obtainable in wide variety from Lily Mills. Straight threads are traditional and composed of a variety of twists and plies in one fiber.

The degree to which a yarn is turned, or twisted, and the number of plies or strands, determine its character. The size of a thread, or number of its plies, is a very important consideration. Even when the raw material is soft, hard twisting will make it stiff and change the surface quality of the basic fiber. In very tightly twisted yarn the turning structure is

almost invisible. The number of turns per inch governs the tightness or hardness of the thread and its textural effect.

Combining different twists offers variety in any type of fabric, as will be seen in the description of my samples. You will also see that rhythm in a fabric not only comes from the contrast of dull with shiny, and from various twist combinations, but also from the volume or shapes in yarns.

Alternating heavy with fine yarn, or grouping the threads in either regular or irregular spaces, produces relief cloth of thick and thin areas - a typical textile form (see Sample 14.) A designer working with irregular yarns considers two ideas. He uses the threads in contrast with straight yarns; or, after studying their qualities, transforms them into an entirely new appearance. With flake and nub threads there are further possibilities. Any fancy yarn may be used as a design element, but must be related to technical values, weave, and intended purpose.

WEAVE

Each weave has its own technique. To understand character in weaves, study their appearance and language. Textile-making is search for a right weave to carry out an idea. A basic weave does not make an original cloth - originality is interpretation and conversion of basic weaves.

Just as a painter acquaints himself with forms in nature, the weaver learns all about fundamental weave patterns. He will see that plain weave is an all-over structure when warp and weft are made of the same yarn. And will notice that the appearance of the plain weave is even, because an equal amount of yarn is distributed over a square inch in both warp and weft. Using a thicker filling than warp, the plain weave's appearance will change. The crossings or stitches formed by the individual warp yarns become longer and more pronounced, in this case, and the thick wefts make ribbed crosslines.

Twill weaves are linear effects. The diagonal of a twill may be only in one direction - right to left or vice versa, across the fabric. But the directions of twill lines can change the structural movement in a pattern. Zigzag twill is either horizontal or vertical, as in herringbone.

Ornamental content may be achieved by other means than repeating the weave. Rhythmic pattern is obtained by several different motifs arranged in continuity (see stripe Sample 12.) By grouping and composing weaves you arrive at new ideas and original constructions. The basic weaves are already invented, but every weaver who is a designer is confronted with new problems of how to use them artistically.

A simple combination plain weave and twill in various orders can be as follows: two rows woven plain weave alternating with a unit of even-sided twill, or stripes of warp with weft twill. In this type the contrast between the two weaves is not so strong as in a twill combination.

In plain weave and even-sided twill there is as much warp as filling, but in warp twill lengthwise structure is pronounced. And horizontal stitches appear as contrast in the weft. If you make this sort of thing on a light warp with dark filling, two stripes will appear - one with dark background and light diagonals, the other with light background and dark lines.

However, if emphasis is on weave consideration, with color and new yarn products neglected, one may discover a lack of artistic flair. Without interesting yarns in charming colors the motif becomes merely graphic and looks more printed than woven.

COLOR

Color is the dramatic agent in interlacing and yarn. Some textiles center interest in yarn composition and weave construction, but there are many cases where color is the feature. Colors are not often used alone, usually in combination. The tone of a color - its dimension, or value, hue and intensity - changes with its use. There is a complete relativity between tones in a composition. Influence of one color on another depends on the color qualities and also on the quantity, or space, each color occupies. A bright green weft that looks subdued in a grey warp in plain weave will be luminous in weft twill. The influence which colors have on each other side-by-side is so strong at times that the apparent color of the yarn is completely changed in the woven structure. Learning and seeing these conditions, you can produce desired effects.

The transformation of the colors when they are combined is important. You choose two colors that are similar in value and intensity, as in Sample 11, discovering that they influence each other but little. A light red next to a light orange on a neutral pale grey warp does not cause much change between the tones. But a striped warp, one inch black alternating with one inch white, using medium grey filling, will undergo many changes. The same grey will look dark in the white area and appear light against the black stripe.

Try to discover similar changes in one-colored warps. All colors look darker and deeper in white settings, white having intense light and capacity to overpower other tones. On a black warp, however, the colors look brilliant and light. When you want to keep the weft tones fairly normal, choose a neutral or grey warp.

The geometric effects in my samples are created by combining warp and weft color arrangements specifically related to the weave. A plain weave, in Samples 1 and 2, is transformed from horizontal to upright and lengthwise stripes. The warp of dark and light alternating ends in Sample 2 has thin uprights in which a dark weft is used in a shed of raised light ends. The light weft was thrown when the odd-numbered ends were raised. The procedure, reversed, achieves crosswise lines: the darks raised and a dark filler required.

Color sense in some people is highly developed - their choice and judgment in it are intuitive. Other people are less color-sensitive, not much affected by disharmonies. But no matter how developed the color sense, or how the other elements in weaving attract us, colorful yarns are indispensable to the weaver.

THE SAMPLES

The sixteen samples which follow were constructed on one warp consisting of light and dark contrast - one light warp thread and one dark alternating - a scheme productive of countless ideas. You will understand that each warp has a specific character, limiting the designs made on it.

Light and dark, mentioned now and then in descriptions of these samples, refers to color value, such as black and white; and this concept can be extended limitlessly in all colors. Instead of old gold and black, as in my samples,

you may take a light yellow, and for black use a brown tone, as warps. But if you desire less contrast your two colors must be closer in value, such as medium green with a darker shade of the same or some other color.

For yarn interest in these weave plans I selected Lily Mills thread in two styles of straight yarn: Art. 414 carpet warp, black, and Art. 114 Lily Mercerized, Perle 3, old gold 79. The carpet warp is harder-twisted and slightly finer in weight than the gold Perle 3 cotton, which has lustre, contrasting with the black carpet yarn.

Of each color, in warping these samples, I used about five ounces. The project warp is eight inches wide with fifteen warp ends per inch, a total of 120 ends. The warp is six yards long. One end of thread 114 (old gold) alternates with one of 414 (black).

The warping may be done using two or four spools. If you make it with two spools, one will be black, the other old gold. But with four spools, two are black and two gold. Arrange the spools alternately on the rack so that your warping cross alternates the gold and black (or light and dark color of your choice.)

My threading is straight or twill on four shafts - 1,2,3,4 and repeated. Take a reed No. 15, slewing single dented - one in each dent. And for tie-up I propose that you tie a single shaft to one treadle, according to your loom. You will see that some of my samples are in tabby, others in twills and combinations. Thus the proposal of direct tie-up, so you won't have to change shaft and treadle tying for each weave.

There are sixteen different patterns. The first four are plain weave tabby, the second four even-sided twill. These are followed by four of weft twill and four examples of two original weaves combined. In each one a new idea is clarified. The variations include different Lily Mills yarns and coloring, emphasizing the influence of yarn and color to achieve specific effects, which you can easily vary according to your own creativity and skill.

The gold and black (or light and dark contrasts) of the chosen warp threads govern all the samples - all the samples depend on the same warp. For both warp and weft, when you experiment with these designs, choose your own colors, but limit the choice as I have done, in order to arrive at similar effects.

Here are the samples and instructions for your experimentation :

TABBY WEAVE

Sample 1 Weft: Alternate one row Art. 114, Perle 3, old gold
With one row Art. 414 black carpet warp

When all the black warp yarns are raised, insert the gold filling, and with the opposite shed the black. The pattern forms vertical lines, one dark, one light. Reverse procedure for horizontals.

For pronounced effect try heavier yarn in both warp and weft, or use basket instead of plain weave, threading the warp 2 black, 2 gold alternately.

Sample 2 Weft: Alternate one row Art. 114, Perle 3, old gold
With one row Art. 414 black carpet warp
Do this twice - then reverse color
Alternating Art. 414 black with 114 gold
This also twice

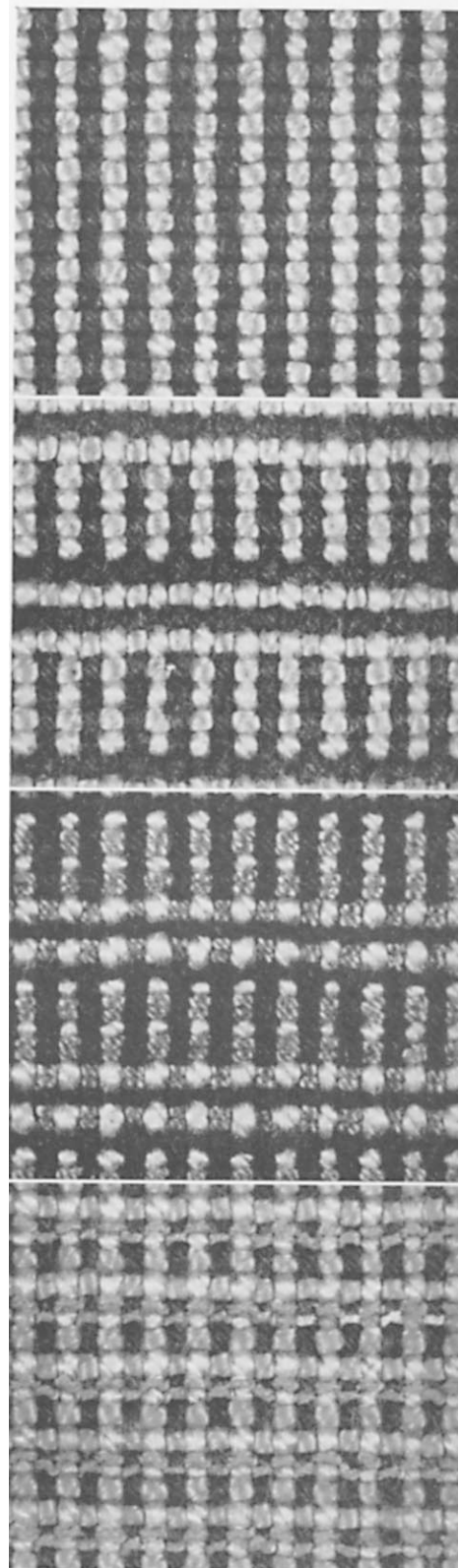
Here you combine vertical lines with horizontals in a lively design - a division of even groups. Or you may design something more pronounced: larger stripes of horizontals with smaller verticals.

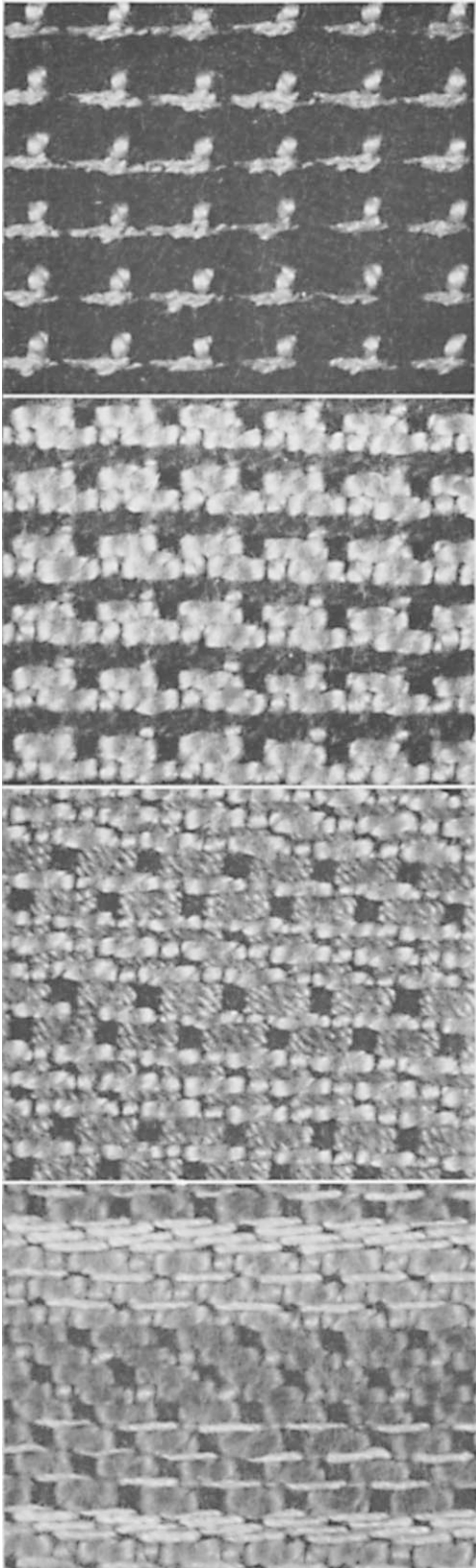
Sample 3 Weft: Introducing a new color, alternate Art. 714 10/3, orange, double filling thread
With Art. 105, Size 2, black single filling
Do this twice - then reverse same colors
Alternate Art. 105 black
With Art. 714 orange
This also twice

Same as Sample 2, but this design is more colorful. The black filling is finer and irregular. Work with color, study your warp and choose harmonies - from subdued to the most brilliant scale, according to your liking.

Sample 4 Weft: Introducing another brilliant color, weave 2 rows of Art. 105, Size 2, jade
Alternating with two rows of Art. 114, Perle 3, aqua

The general effect is brilliant-tone harmony, warp subdued, in two kinds of yarn - for variety - a straight and a novelty. The weft color is the same light value as the gold warp. Try other colors for the same effect, shading with the black warp - for instance, a dark red.





TWILL WEAVE

Raise shafts 1 and 2, 2 and 3, 3 and 4,
4 and 1

Sample 5 Weft: Alternate one row Art. 414 black carpet
warp
With one row Art. 114, Perle 3, old gold

This familiar pattern in apparel woolsens,
called Step Design, is not limited to apparel, looks just as well
in upholstery and other fabrics. Geometrical designs are
brought out by using contrasting colors, light and dark. In
this sample you could make a color change, replacing the gold
with a bright yellow, the black with dark brown or a black
novelty.

Sample 6 Weft: After three rows of Art. 105, Size 2, black
single filling
Weave one row Art. 114, Perle 3, Size 3,
old gold

A little bit of change in the color order
creates amazing difference in the cloth. This pattern is more
vertical-lined and darker than Sample 5. Use uneven num-
bers of color repeat, like 3 dark 1 light, or vice versa, to create
interest and irregularity.

Sample 7 Weft: After three rows of Art. 105, Size 2, black
single filling
Weave one row of Art. 314, Size 5/2 white

This sample resembles the preceding twill,
the white weft making all the difference - a lighter, more pro-
nounced effect.

Sample 8 Weft: Alternate two rows of Art. 714, Size 10/3,
burnt orange
With two rows of Art. 114, Perle 3, burnt
orange

Twill is considered an ordinary weave, but
using this construction inventively it becomes unusual. The
light and dark warp forms a pattern together with the twill.
Use of color naturally influences our designs. Even a plain
weave with unusual color scheme becomes an outstanding
idea.

WEFT TWILLS

Raise shafts 1, 2, 3, 4, in rotation

Sample 9 Weft: Alternate two rows of the double black or dark yarn used in the warp
With two rows single Art. 105, Size 2, old gold

This cloth has structure, much weft-filling on the surface, achieving dimensional texture. The pattern is for sportswear and upholstery, depending on color.

Sample 10 Weft: Alternate two rows of gold yarn used in the warp
With two rows Art. 108, Size 8 2, dark brown

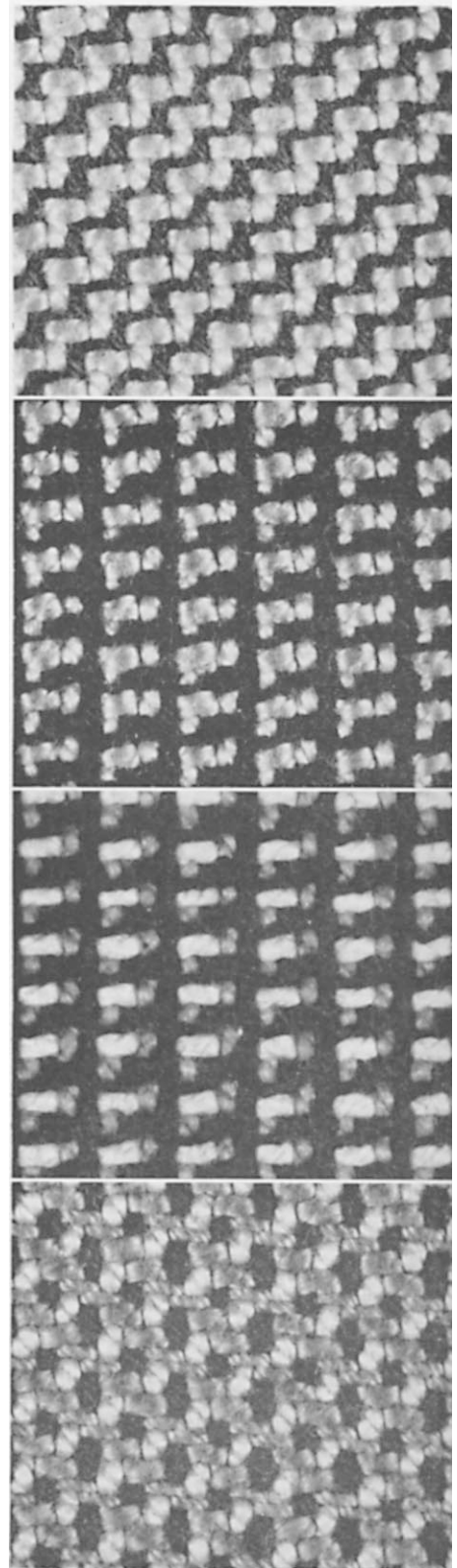
Same idea or effect as Sample 9, but in lighter scheme, varied simply by color. Both sides of this cloth are effective.

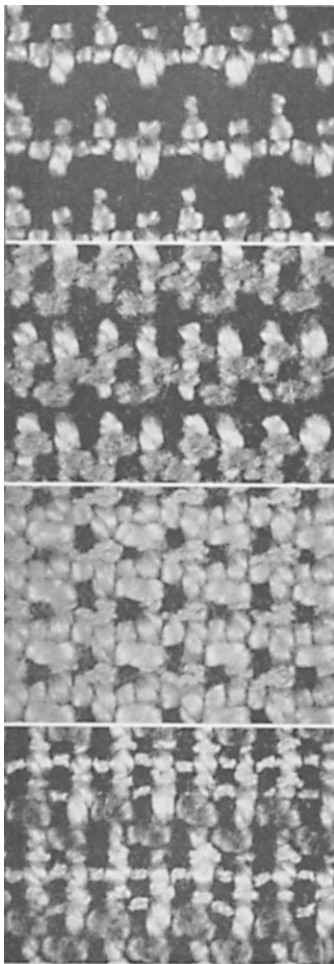
Sample 11 Weft: Repeat in rotation one row gold or light warp yarn
One row Art. 714, 10/3 burnt orange
One gold warp
One burnt orange
One gold warp
Then one row - but size 10/3 burnt orange
One gold warp
And one row of size 10/3 burnt orange

A muted stripe, alternating orange and yellow wefts: colors in close or related values. Light-valued orange and pink, blue and green, purple and red will achieve same harmony.

Sample 12 Weft: Rotate twenty-one wefts, as follows:
One row Art. 114, Perle 3, dark orange
One row Art. 314, Size 10/2, chartreuse
Repeat these alternately, making six wefts
Weave five rows dark orange alone
Then one row gold warp yarn
One row of the chartreuse
Woven alternately - gold and chartreuse - for six wefts
Concluding with four rows of chartreuse

A definite stripe of contrasting colors. For such sharp stripes, alternate large proportions of strong dark and light color contrasts.





MIXED WEAVES

Sample 13 Weft: Alternate 2 rows basket weave in black (or dark) warp yarn
With two rows plain tabby Art. 114, Perle 3, aqua

The pattern is exemplary for woolen skirt material - the light warp making dotted allover, with faint zigzag background formed by the black or dark thread.

Sample 14 Weft: Four rows Art. 110 wool, slate grey, in following shaft order: Raise 1 and 2, 3 and 4, 1 and 4, 2 and 3
Alternated with a unit of two rows plain tabby, Art. 105, Size 2, black

A soft-looking muted fabric, due to predominant use of a neutral such as grey.

Sample 15 Weft: Alternate two rows Art. 114, Perle 3, aqua in shaft order 1 and 2, 1 and 3
With two rows Art. 105, Size 2, jade in shaft order 3 and 4, 2 and 4

This is a combination of basket and plain weave re-arranged in an original construction. The allover harmony or evenness of the texture affords a very suitable opportunity for your selection of attractive bright Lily Mills colors.

Sample 16 Weft: Alternate 4 rows tabby, Art. 105, Size 2, old gold
With 4 rows basket weave, Art. 114, Perle 3, orange

In the last sample standard weaves are combined, as well as straight and novelty yarns. The fine gold boucle forms a crepelike background for the thicker structure of the orange thread.

CONCLUSION

These samples are presented, of course, as a starting point for your own inventions. They were not meant to be slavishly copied or adhered to, but to guide and create beginnings. This will strengthen the planning of your future projects. To realize a specific textile take time to consider (1) motif - such as allover or stripe, (2) density - open or closed weave effects, (3) color - muted or brilliant; and (4) purpose - upholstery or apparel. The intended use will often suggest the color. Motif and density are considered simultaneously, because with each change of yarn weight the effect of the motif changes. These are the rules - to be governed by technique, experience and taste.

Experiment in sample weaving is a valu-

able exercise for every weaver, professional or amateur. The interest is always design. The elements yarn and color play a leading role. Where there is a brilliant and wide choice of these elements, as in Lily Mills threads, a weaver's work is made lighter.

The pleasure in weaving - for most weavers - is design. This creative work should not be done by rote. A design of your own will take place as you work with these yarns and ideas, and become unconscious of the technical routine and fixity of past achievements. Do not often repeat ideas - your own or others - but think of each weaving as a new problem and possibility of creative learning. Making samples is the means by which we discover ideas and develop skill, combining our own experience with the materials at hand.

LILY MILLS COMPANY
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