

# Novel Fabric Effects

By JAMES CHITTICK, NEW YORK, N. Y.

## No. 1.

The fabric which is illustrated is a sheer, striped, gauze-like construction, although not woven with a gauze, or leno weave. The general appearance of the cloth, both face and back, is somewhat dead and non-lustrous, but the pattern part of the face, where the rayon warp appears on the surface, stands out clear and lustrous.

The warp is grouped into ribs, or stripings, there being no warp yarns at all between these stripes. In the finished cloth, there are  $12\frac{1}{2}$  ribs per inch, and as woven in the loom, there would be approximately 12. The warp has been drawn through a 24 dent reed, a group of the ends being passed through one split, and the next split being left vacant, and so on, alternately. In each of these groups there are 5 warp yarns, arranged,—one cotton, one rayon, one cotton, one rayon, one cotton.

The cotton yarn employed is 120/2, mercerized. The rayon yarn is 80 deniers in size. The two rayon ends in each group, being held tightly between the three cotton yarns, display little or none of their luster when the cloth is looked at squarely, but when looked at endwise in a sharply sloped position, the luster of the rayon shows up. Owing to this change of visibility of the rayon, due to changing positions, the fabric, in garment form, presents a changeable appearance, from dead to lustrous, with the movement of the garment folds.

Where the woven figures appear, the two rayon ends in each stripe are floated on the face. There are 54 picks per inch of 120/2 mercerized cotton in the finished cloth. The rayon floats in the woven figures extend over seven picks. On the back of the cloth, where these rayon floats occur, the cotton warp ends do not float loosely, but are woven in tightly with the filling yarns. The binding arrange-

ment for the middle cotton end in each stripe is

$$\begin{array}{ccc} 2 & 1 & 2 \\ \hline & 1 & 1 \end{array}$$

This fabric, understood to be of European origin, is piece dyed, and finished in the manner customary for such materials, being dyed in the dye-jig and finished on the tentering frame.

## No. 2.

No. 2 is a French fabrication, of which a few pieces were brought out here early in 1916. It is a double cloth, both the face and back structures being woven on the gauze, or leno principle, with doup harnesses. There is also an intermediate, or binding warp, which joins the fabrics loosely.

In the sample, the face cloth, which is of silk, is dark blue in color. The back fabric has a blue silk warp, and a white cotton filling, and the intermediate binding warp is blue silk. The goods have been piece dyed for silk, the cotton remaining undyed.

As the binding warp ends join these two cloths at unusually wide distances the union between the two is very slight, and therefore, the two surfaces of the cloth when handled, or when made up into costumes, do not move in exact unison. This produces a

most admirable moiré effect, clearly defined, but shifting in outline and character with the slightest movement of the material.

The object of having a cotton filling in the back cloth is not to cheapen the material, but by its contrasting color to accentuate this moiré effect.

In the face warp, there are  $27\frac{1}{2}$  pairs of ends per inch in the finished cloth, doup woven, of a fairly hard twisted, fine two-ply; spun silk. Similarly, in the warp of the back cloth, there are  $27\frac{1}{2}$  pairs of single ends of 20/22 denier

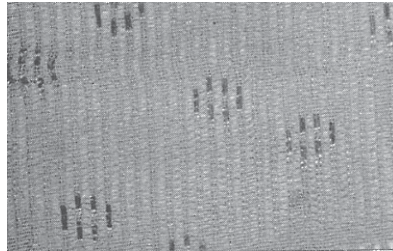


Illustration to No. 1.

raw silk. The binding warp is composed of single ends of the same two-ply spun silk as the face warp ends, and these binding yarns occur about seven-eighths of an inch apart, interlacing with the face filling picks once every fifteen picks. They interlace more close-

width of the cloth as woven in the loom appears to be about 5% wider than its width finished. The shrinkage in cloth length in finishing as compared with its actual woven length is about 7%.

In the fabrication described, rayon back fill-



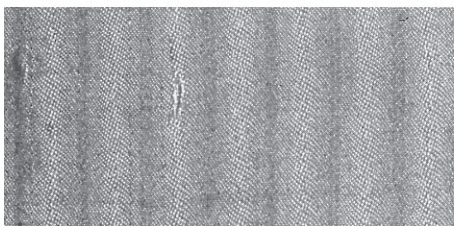
Illustration to No. 2.

ly with the cotton filling of the back cloth the repeat of these interlacings covering twenty picks and being as follows:

$$\begin{array}{cccccc} 1 & 1 & 1 & 1 & 1 & 1 \\ \hline 6 & 2 & 2 & 1 & 1 & 2 \end{array}$$

The picks, per inch, of the silk face cloth,

ing 80 or 90 deniers in size, could be advantageously substituted for the cotton filling, and its use would give an increased brilliancy to the fabric.



Illustrations to No. 3.

average 51, with the same number of cotton picks in the back cloth, the cotton being 120/2 mercerized.

The finish is soft and ungummed, and the

No. 3.

The construction is what is known as a "Reed Ombre" and the illustrations show fabrics manufactured for tie silks about twenty-

five years ago, though materials of this general construction have been brought out from time to time by different manufacturers.

The warp yarn in these is two-thread organzine, 16/14 turns, made from 13/15 denier raw silk and weighted 16/18 ounces. The filling is a four-thread tram, made from 13/15 denier raw silk, and weighted 22/24 ounces, both warp and filling being tin weighted, bright.

The weave is a five-harness satin, and there are, collectively, 240 warp ends per inch, the warp being drawn through a 60 dent reed. If the cloth were reeded in the usual manner, 60/4, the fabric produced would be conventional satin construction. To secure the ombré effect, however, the reeding is done in an irregular manner. Each repeat of the stripe is approximately one-third of an inch wide in the finished cloth, and there are 90 ends in the repeat. The groups of warp ends are drawn in through the succeeding dents in the reed in the following order:

7-7, 6-6, 5-5, 4-4, 3-3, 2-2, 3-3, 4-4, 5-5, 6-6  
Total—90.

The illustration showing the sharply contrasting colors has a navy blue warp and a white filling. The crowding of the navy ends, where they are reeded 7-7, 6-6, etc., gives to that portion of the stripe practically a solid color, but where they are reeded 2-2, etc., the white filling predominates and becomes more visible, and thus the shaded, or ombré effect is secured.

The other illustration shows almost a self color, both yarns being red, though the red of the warp is darker than that of the filling.

Similar effects could be secured in piece dyed fabrics by the use of a silk warp with a rayon filling. Of course, wider stripings can be made, following the same general idea of uneven distribution of warp yarns in the reed.

Other modifications may be made by breaking up the general ground effect at intervals by ribs, or groups of ribs, in which the filling yarns will float for possibly one-sixteenth of an inch. A group of five such filling-rep stripes at intervals of two, or three, inches apart is very effective.

No. 4.

The "straw" braid illustrated for use in making women's hats, was brought out in Europe some twenty-five years ago, and shows that, from the manufacturing standpoint, silk may be cheaper than straw, for this braid, apparently of straw, is actually composed of silk.

In making straw braids for hats, which, in Italy, is a very extensive industry, a very fine, excellent, and long variety of straw must be grown, and from this the longest and best straws are selected for braid making. Long as they are, when braided, the length of braid that can be secured from a group of straws is relatively short because of the angles. Then, there is the tedious work of interlacing new straws, as those in the braid run out, with great loss of time, and there is also a very substantial wastage of the material. This, coupled with the original high cost of the straw, makes these braids relatively expensive.

The braid illustrated is brilliant, smart, and straw-like in appearance, and of a bright, medium yellowish tone, in fact, a regular straw color.

The other illustration shows a piece of the braid which has been boiled out in water, and in which the fine fibrous nature of the silk employed in its manufacture is clearly apparent.

In the production of these braids, groups of tussah silk yarns are doubled side by side. In this instance, each group is composed of twelve ends of sixteen-cocoon tussah, the average size of the individual threads being 65 to 70 deniers. These groups of parallel ends, spreading out in width to 3/32 of an inch are run through a heavy gummy sizing solution, of a bright yellowish color, which thoroughly impregnates them, after which they are passed over drying cylinders, and between pressing rolls, and thus a continuous "straw" of suitable width, firmness, color, and luster is secured. This is wound in long lengths onto bobbins, or spools. Thirteen of these are plaited together in the sample and are braided into a one inch braid. At each edge of this braid, two strong, fine, three-ply white cotton yarns are braided in with the material to assist in giving stability.

A microscopical examination shows that the

silk used is, beyond question, a tussah silk. The color of the boiled-out sample is an ecru shade, with a greenish tone. Unless a darker colored braid were wanted, the ordinary shade of the tussah silk would not be applicable. The material used, therefore, in this braid may possibly have been reeled from the Yama Mai

cocoons of Japan, which are green in color, but boil down to a shade similar to that described, or, one of the exceptionally light colored tussah silks, and there are some, may have been used. Then again skeins of regular tussah may have been bleached down with peroxide

bleach to a suitable light color.

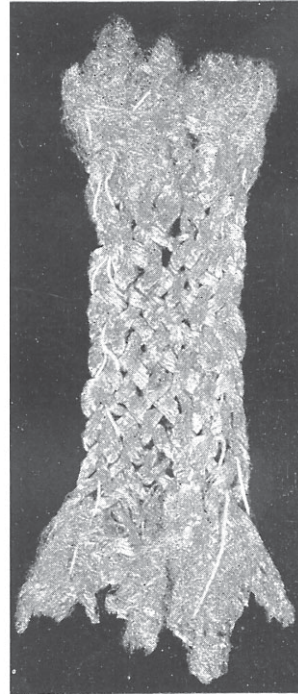
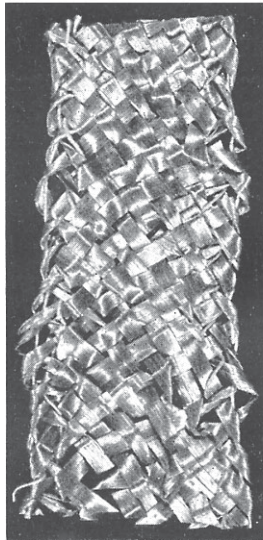
At the time in question, sixteen cocoon tussah silks of good reeling, and fairly regular

size of filament, would have been obtainable at not over \$1.50 a pound, perhaps \$1.25, or even less.

Although the straw, of course, while very expensive as straw goes, would have been far below this cost, yet, the enormous saving in labor, the elimination of wastage, and the extreme rapidity of production, outweighed these differences in the cost of the material, and thus an all-silk braid was produced, which, at the time, was

cheaper to manufacture than an all-straw braid.

Rayon yarns might be very advantageously employed in making braids of this character.



Illustrations to No. 4.