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#### EFFECTS OF COLORS IN TEXTILE DESIGNS.

**T**HE popular acceptance of figured textile goods so largely depends on the tastefulness of designs brought out that too much attention cannot be paid to the positive character and relations of colors under which these are rendered effective, or "taking" with the public, whose instinctive perception of what is beautiful, as well as novel, must at all times be relied on. Even in the retail trade a knowledge of the effect of modifications of color produced by the blending of one with another, by juxtaposition or other arrangement, as well as of relative proportions, with the result brought about by an article of dress of one color or group of colors being worn with another of different hue, is calculated to be essential service. The effects of colors on each other, as regards the general appearance of patterned fabrics, are reducible to known laws, acquaintance with which leads to correct judgement. For want of reference to the principles of color, nothing is more common in the textile trade than for dealers and purchasers to confound hues, as orange for orange-yellow, yellow for greenish-yellow, and blue for violet-blue.

Two leading classifications exist, one in the results of the juxtaposition of colored bodies belonging to the same group in tones, scales and hues; the other in the assortment of colors of different groups with reference to their effects on each other. The modifications which colors undergo from mixing or being placed in the vicinity of each other, according to their classes, have of late been formulated by French experts with great precision and completeness. In all designs the complex association of colors must be taken into account. Thus the primary mixed colors are orange-red, in which red predominates; orange-yellow, in which yellow predominates; lilac-red, in which red predominates; lilac-blue, in which blue predominates; greenish-yellow, in which yellow predominates; greenish-blue, in which blue predominates. The binary mixed colors are orange (yellow and red) with sub-divisions of deep orange; medium orange and light orange (nankin); lilac (red and blue) of which colors having any one common element in their composition tend to lose it by juxtaposition, and so become more unlike each other. Thus orange and green having yellow in common, the orange appears redder and the green bluer; orange and violet having red in common, the orange appears yellower, and the violet is tinged with green; green and indigo having blue in common, the green is yellower and the indigo bluer; green and violet having blue in common, the green is yellower and the violet bluer.

The sub-divisions are violet evegue (deep lilac), medium lilac, light lilac, green (yellow and blue), of which the sub-divisions

are deep green (grass), medium green (Scheele's), light green (water). The tertiary mixed colors are garnet (brown, green and red), of which the sub-divisions are puce (flea color), or deep garnet, medium garnet, light garnet or tobacco; bronze (brown, blue and yellow), of which there are brown, olive and resede; brown, (orange, red and blue), producing brown (solitaire), biatre, wood, and hazelnut (stone drab); black (red, yellow, blue), sub-divided into black, black-black, blue-black, dead-black and light black. Complementary colors heighten one another, producing an agreeable, harmonious effect, as orange and blue, violet and greenish-yellow, if arranged with proper regard to proportion; indeed due proportion of space occupied and relative position is the secret of the attractiveness of many patterns. In the modifications brought about by associated colors the complementaries assert themselves. Thus in the associated colors, orange and green, the complementary color of orange being blue, and of green, red, the tints produced by contrast are in the one case reddish-orange, and in the other bluish-green; with orange and indigo associated, the complementary of orange being blue and of indigo orange-yellow, the orange changes in the contrast to yellow and the indigo to blue; associating green and indigo, the complementary of green being red, and of indigo orange-yellow, the green changes to orange yellow, and the indigo to blue; if green be associated with violet, by the influence of their respective complementary colors, red and yellow-green changes to yellow, and the violet to green; red and blue being associated, the complementary of red being green, and of blue, orange, the red changes to orange, and the blue to green. Colored textile surfaces reflect all descriptions of colored rays, but the rays which determine the hues are reflected more numerous and more intensely. Green-black, whilst absorbing light, presents numerous interstices of other colors. White surfaces reflect light whilst decomposing it, and complementary colors not unfrequently produce white light, thus softening the hues, besides otherwise modifying the effect. In mixed colors used by dyers and printers the primary colors will neutralize each other when there is an excessive proportion of any one. This is the case with crimson, red and greenish-yellow, which give results far duller than crimson-red with the slightest admixture of color, the latter imparting a coppery tinge. Scarlet-red and greenish-blue give a mixture without color and purity relatively to crimson-red and violet-blue. Pure red and blue give a mixture not so dull, because the color contains no yellow. Orange and blue-violet make a very dull mixture; orange-red and violet are more lively. The combination in textile designs of two tones of the same color are seldom successful, for the lighter loses in hue, and if the deep tone acquires it, it is seldom admired.

The effect of compound colors and of simple colors on each other offers a wide field to the designer for modification, and which has largely been taken advantage of for this season in the production of novel hues for dress goods. The modification of color, instead of being less are the greater, the greater the difference between two contiguous colors. Orange beside scarlet-red, pure red and crimson-red acquires a yellow tint, and the red a purple tint; violet appears livelier when placed beside red, and the red yellow-er. The modifications of contiguous colors are much more marked when the complementary color is added to them. The mere effect of a succession of colors, owing to the law of simultaneous contrast, will itself exert an appreciable influence on the appearance of patterns. A blue stripe, for instance, placed beside an orange stripe will first appear green and then incline to violet, and the orange which appears at first yellowish, will incline to red. There are some stuffs which appear to be of two tones of the same scale of color, and sometimes also of two tones of two contiguous scales, although the weft and warp of these fabrics are of the same tone and the same color. The cause of this appearance is very simple and arises from the fact that the parallel threads forming the designs are in a different direction to those of the ground, the former reflecting colored and white light in a different proportion to the latter; this, too, varying with the position of the spectator. To show the effect of position, it may be mentioned that the spiral thread of a piece of silk or wool, held perpendicularly to the eye, appears in the part opposite to the light of a much more decided color than on the rest of the surface. A regular gradation of tone in colors is not infrequently very pleasing in a pattern; so also a clearly defined repetition of colors, not only owing to distinctness, but the attractiveness which attaches to geometrical succession, whether in linear arrangement or occupying in a pattern the same relative position to each other throughout the piece, as in a flowered design containing separate groups, separate, but artistically allied. The contrast of colors which are not analogous tends to enhance them. Colors which produce an agreeable contrast are red, yellow, and blue; the sub-divisions of red being deep-red, cherry-red, and rose-pink; of yellow, bouton d' or immortelle and straw; of blue blue de France, (gros blue, medium blue), ultramarine and celestial blue. The method of bringing out a color by contrast is to use either light tones, complementary, or more or less opposed in broken tones, more or less gray, and of tints complementary to each other; or in employing a broken tone, of a tint complementary to a more or less pure contiguous color. To put a dark color near a different or lighter color is to heighten the tone of the first and to lower that of the second, independently of the modification resulting from the mixture of the complementaries. An important consequence of this principle is that the first effect may neutralize the second or even oppose it. For example, a light blue placed beside yellow and blue are so dissimilar, that their contrast is always sufficiently great for their juxtaposition to be favorable; but by placing a color in juxtaposition with one which is not its complementary, the former is improved whilst the latter may be injured. Thus a blue, which may be improved by a yellow, may lose some of its beauty by being placed beside a violet, by becoming greenish, whilst the orange it adds to the violet improves the latter. Two non-complementary colors, as violet and blue, may injure one another, as in the case of violet and blue when the first greens the second, and the violet assumes a faded appearance. Next, as to contrasts, indigo blue, applied to silk in which brown figures, gives to the brown a violet tinge, and to light hues a greenish tinge. An orange compound upon silk or wool will yield light tones tinged violet-red. Whenever contiguous tints in a pattern are to be mutually strengthened without going out of their respective scales, it is of advantage that the ground should be of a complementary color.

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