CHAPTER III
COLOR IN DRESS

Importance of Color. It is said that line is the intellectual quality of a costume; if this is true, then color is the emotional quality of dress. The color of a costume or fabric either appeals to us or displeases us more than any other element that enters into it. Since color is one of the some important elements in a costume, it is important for us to know how to choose colors harmoniously and effectively. There are a few who are naturally endowed to select proper colors. However, some of us acquire this ability through practice and experience. In order to do this successfully we must observe the personal coloring and the effect of color upon the wearer, and then learn to apply the theory of color.

The clothing we wear may be composed of a variety of fabrics, such as cotton, wool, mohair, silk, rayon, linen, tinsel, in whole or part. The attractiveness of our clothing is due more or less to the appearance of the fabrics. To illustrate: cotton is dull; wool has depth of color; mohair has more luster than wool; silk has a deep pearly luster; rayon has a metallic luster, etc. In order to enable us to know why such differences exist among fabrics, it is necessary to know the action of light on these substances.

When a ray of light strikes an object like a piece of cloth it may be, in whole or part, (1) reflected regularly, (2) reflected irregularly, (which we call diffusion), (3) absorbed, (4) pass through the material without any change, as in the case of window glass. In passing through the material the rays are bent and separated into a "play" of colors called dispersion or analysis of the ray.

In order to understand the luster of different fabrics, it is neces-
sary to have a clear conception of (a) reflection, (b) absorption, (c) transmission, and (d) refraction of light applied to fabrics.

Sheen Due to Grain. The direction in which the rays of light strike an object or material and are reflected back to the eye has a great deal to do with the kind of luster called sheen that results as fabrics absorb part of the rays and reflect others. For example, if two pieces of the same napped or pile fabric are placed side by side, one in the direction of the grain and the other in the opposite direction, one will notice a difference in shade due to the difference in direction in which the cloth has been brushed and finished. Hence great care must be exercised in cutting napped fabrics to see that they are placed together so that the nap runs the same way, otherwise the finished costume will have the appearance of being composed of fabrics of different shades — light and dark.

As far as possible it is desirable to have all woolen goods (including panne velvet, which is made of mohair) cut so that the nap runs down, while the silk and pile weaves of silk pluses and velvet should be cut with the pile running up.

If the surface is uneven but smooth in parts, the light is reflected at all angles, and is called diffused light. Light in a store where fabrics are displayed should be diffused daylight, while in a ballroom a softer light, rich in yellow and orange tints, is preferable.

Reflection. We see objects such as clothing by reflected light, that is, by the light from the sun or an illuminated object, which strikes the material and is reflected to the eye. If the surface is smooth, the rays are reflected at the same angle at which they strike the surface, and appear bright or “shine,” that is, they have luster, as silk and rayon. If the surface is porous, the rays are not reflected regularly, but at different angles, and the surface appears dull, as in the case of cotton. Since the surface of fabrics differs in smoothness it is natural that we should have different degrees of reflection, hence different degrees of luster or brightness. Luster varies with the smoothness of the surface and composition of the fabric.

Luster affects to a remarkable degree the appearance of the person wearing the costume. A high-lustered fabric makes one appear larger because it reflects more light and leaves a very distinct after-image, or sharpens the outline. While a dull-lustered
fabric makes one appear smaller by reflecting less light from the outline of figure, leaving a duller after-image.

Lustered fabrics appear in different degrees with different style periods or tendencies. Luster in fabrics or threads is often spoken of by stylers as sheen.

**Refraction.** Light may pass through a substance like window glass without any change. On the other hand, light may strike an object, and as it passes through the material the rays may be bent, (called refraction), and separated into different colors, called the component parts of the light that passes through. This is the reason why we notice the display of many colors on pearls and some other substances.

**Transparent, Sheer Fabrics.** If the light passes through a fabric like a voile, even if a misty view is displayed, it is called transparent. On the other hand, if light passes through a thin fabric like georgette crepe and thin crepe de chine it produces an outline or shadow of the figure underneath and it is said to be a translucent or semi-transparent or sheer fabric. If light fails to pass through a serge, the fabric or dress is said to be shadow-proof or opaque. The thinness of the fabric determines the degree of shadow, and the thickness of the fabric determines the degree of shadow-proofness.

**Absorption.** When light passes through a fabric it may be absorbed in part and the light that leaves may be changed accordingly. This is called transmitted light, as compared to reflected light. Notice the effect of light that passes through a highly-colored silk fabric.

When rays are absorbed by a material (since rays are a form of energy) they are transformed into heat by the fabric or the color. Some materials, like black, absorb more rays and form more heat than white fabrics. Hence, dark fabrics are warmer than white or light-colored clothing.

**Effects of Material on Color.** The effect of material on color is dependent in a large degree on the composition and finish of the material, and on whether the surface is smooth or rough, as will be explained later. The color of a textile fabric or costume depends on its nature or composition — whether silk, cotton, wool, etc. — and also on the light in which it is viewed.
Look at pieces of silk, rayon, cotton, woolen, and worsted of the same color. You will notice that while all have been dyed with the same dyestuff each one has a different tone, due to the difference in reflected light, which, in turn, is due to the difference in the smoothness of the fibers. The silk coloring has a brilliancy and compactness due to the pearly luster of the fiber. This luster is due to the fact that the fiber of silk is partially transparent and casts glassy or pearly rays when light falls on it. Rayon, on the other hand, has a metallic brilliancy because the fiber is smoother than silk, with a surface like a piece of metal. Woolen colorings have a unique depth and saturation of hue. This is due to the wool fiber, which is solid and opaque in the center, although its outer side consists of a large number of semi-transparent scales of large or small size uniformly arranged. These scales reflect light with a small amount of refraction and give a distinct and peculiar lustrous appearance.

Wool always appears rich in color because it has depth or penetration. The lustered fabrics like silk and rayon give off the color due to the great reflective power, while cotton appears dull because it fails to reflect or refract to the same extent.

Worsted clothing on the other hand, while made of the same composition as woolens, appears lighter and smarter than the woolen, due to the fact that the fibers are parallel and reflect the light more regularly than the woolens in which the yarn is uncombed and uneven. Wool has a fullness and a depth of color that is lacking in the lustrous, brilliant, rich silk. Cotton coloring, while decidedly firm and clear in effect, is not lustrous but raw and dull; though it may appear well, it is deficient in color, lacking the warmth and richness that we find in wool and silk. A worsted fabric has more luster than one of woolen because it is smoother.

The formation of color on textiles is very important and the explanation commonly used is called the theory of color.

Composition of White Light. Most of the light we have during
the day is sunlight, which is a pure white light. If we separate this white light into its component parts by allowing the light to pass through a triangular prism, we shall find it is composed of the standard colors of red, orange, yellow, green, blue, indigo, and violet.

The reason white light can be separated into its component parts by means of prism is due to the fact that sunlight comes to us in the form of waves vibrating at different rates. As the rays pass through the prism they are bent or refracted, and separate because they have different rates of vibration. Each wave length is one color, but when mixed together in a beam (number of rays) they produce white light.

**Primary and Secondary Colors.**

The colors may be divided into three classes: primary, secondary, and tertiary. The primary colors — red, blue, and yellow — are the fundamental colors because they can not be produced by any mixture of other colors.

**Secondary Colors.** The secondary colors — orange, green, and violet — may be made by mixing two of the primary colors. To illustrate: (a) Green is made by mixing yellow and blue; (b) orange is made by mixing red and yellow; (c) violet is made by mixing blue and red.

**Tertiary Colors.** When we mix two secondary colors together we form a group of broken colors in russet, olive, and citrine that are not found in the spectrum, and are called tertiary colors. Of course the tertiary colors contain all of the three primary colors in unequal proportions. For example: (a) Russet is formed by combining orange and purple. Note that the red predominates. (b) Olive is formed by combining purple and green, and the blue predominates. (c) Citrine is formed by combining orange and green, and the yellow predominates.

Colors are sometimes classified as (a) warm colors and (b) cool colors. Warm colors are those that we associate with sunlight, while cool colors are those away from the sunlight. Red, orange, and yellow are warm colors, while green, purple, blue, and violet are cool colors.
As we glance over the warm colors, we also note that they always appear more conspicuous than the cool colors and naturally are called *advancing colors*, as compared to the *retiring* nature of the cooler colors.

A person with high color in the complexion naturally should wear cool colors, while a person with a sallow complexion should wear warm colors.

**Use of Primary Colors in Costumes.** No color should be used in clothing in its full intensity since the primary colors are very strong and should be used only in small bits of trimmings. If they are used otherwise they are so bright that they will make one conspicuous.

**Contrast** of the positive colors such as red, green, blue, orange, yellow, and purple, is too glaring to be in good taste except for military and theatrical costumes and for young people.

**Naming of Colors.** The colors we find in clothing are often given picturesque names, as Burgundy red after the color of the celebrated wine of that name. The color royal purple was chosen to denote power in ancient times, because it was the finest and most costly dye of the ancients, and was used in coloring the royal robes. It was used at an early date by the Romans as a mark of dignity. But when we come to match colors in clothing, we must have something more definite than the picturesque name.

All colors may be considered as being composed of one or more of the six standard colors in its most saturated (pure) form. We can name a color by determining (1) the predominant tone of the color in terms of one of the above standards, (2) by placing the standard or family name that predominates last and the other standard color that exists, first. To illustrate: the difference between green-blue and blue-green is that the first has more blue in it than the second.

**Why Fabrics Are Colored.** Since we know that sunlight is a mixture of six standard colors varying in shade as they blend
into one another, we are able to understand why fabrics are colored. Different materials have the power to absorb some of the rays of colored light and they reflect the remainder. To illustrate: If a dress appears blue in daylight it means that all the rays have been absorbed except blue, which is reflected. A textile that looks white, like a bleached linen, reflects all the rays of light. A black taffeta absorbs all the rays of light and therefore looks black. White is the presence and black is the absence of all the essential colors.

Effect of Surrounding Light. We must think of color in terms of the surrounding light. In daylight this is the rays from the sun. Artificial light may be gas or electrical. Electric light is very apt to be too bright and to cause deep, sharp shadows to form. A scheme of color that is harmonious by daylight may be the opposite at night when viewed by artificial light. Dyestuffs owe their property of color to the light that falls on them, and not to the body or substance itself. This fact may be illustrated by allowing different colored lights to fall on the same fabric and watching the colors thus produced. Those colors which fade, or are more or less destroyed by the action of light, air, atmospheric heat and moisture, or under the action of dilute acids or alkalis, as of soap solutions in washing, are called fugitive colors to distinguish them from the colors that will resist these actions.

Dyes. Color is given to the various parts of the costume by means of a dyestuff or pigment. The dyestuff may be added to the fabric by soaking it in a water solution of the dyestuff, which is called dyeing. Or the color may be added to the fabric by means of printing on rollers, in the form of a paste of starch and dyestuff. This method is called printing. Sometimes the color is natural, that is, it is found in the raw material, as pongee, silk, or skins of animals. Light, air, perspiration, and washing agents have more or less effect on the color in a fabric. If a fabric does not noticeably lose its color within thirty days after exposure it is said to be fast. Of course the degree of
fastness varies with the material, the kind of dyestuffs, and the use to which the fabric or costume is subjected.

The vegetable-fiber fabrics, as cotton, linen, etc., do not hold the dyestuffs as well as the animal-fiber fabrics — silk, wool, etc.

There are cotton dyestuffs called vat colors, like indigo blue, that are very fast on cotton fabrics under all conditions. There are also dyestuffs that are fast to washing, etc.

**Black and White.** White is the mixture or combination of all colors. Black is the absence of color. Therefore, black and white are sharp contrasts, and although sharp contrasts in color are not usually recommended, they can often be worn together. White makes a splendid contrast with black.

Black is one of the most becoming tones a woman can wear, and has always been used for this reason. Black with pastel tints or tones can be worn by practically all women. While all black is too solemn for spring, in combination with checks and striped materials it is exceedingly striking. While black is a stylish color in costumes worn in the city, it is decidedly out of place as a color for clothes in the country.

Black added to a color makes it less bright, although deeper. White, on the other hand, when added to another color makes it appear lighter, but pale. Gray colors, particularly neutral gray, when mixed with another color, usually make it appear deeper, but purer. Hence neutral colors are used for effective backgrounds.

**Pastel Tints.** A pastel tint is a tone that is lighter in value than the normal color. A normal color that is thinned or thinned and greyed is a tint. While these tones are lovely, they can not be worn by certain types, as they are too delicate and fragile. Examples: pale rose, pink, nile green, beige, light blue, lavender and wistaria.

**Brown a Dependable Color.** Brown is a dependable color and comes in shades to suit every type. It is especially becoming to brown-eyed people, just as tans are particularly suitable for the hazel-eyed. Golden shades, as well as the deep tones, are good for the black-haired girl with clear olive skin and color in her cheeks. Dark-skinned blondes should choose only the dark browns. Mature women with grayish-brown hair and medium complexions will look well in seal and chestnut, but not in tans.
Some shades of brown are difficult colors to wear. It absorbs the pink from the complexion and leaves it dead looking, unless the complexion is very clear, with red cheeks. If the complexion is good, all shades of brown may not be good with the hair.

Lavender can be worn by very few people. It brings out the yellow in the skin. A pink lavender or orchid is easier to wear than a blue lavender.

Tan is a very difficult color to wear. It brings out the yellow in a sallow complexion. It makes a tan skin look darker, does not go well with an olive complexion or with a sun-burnt skin.

Purple. The red shade of purple is most becoming to the brunette, but the shade is better for a fair skin.

Red and orange are most becoming to the brunette. These, by contrast with the dark skin and hair of a brunette, show with great advantage to themselves, while they enrich the hue of the dark hair.

Color Values. We must know the units of measurement of color in order to compare color values. Color is measured in three ways and expressed technically by the following terms: (1) hue, (2) value, (3) intensity. Hue is the variety of color that is produced by the addition of a small quantity of one color to another. To illustrate: blue-green is a hue formed by the addition of a little blue to green. The number of hues of a color is limited. Value refers to the amount of luminosity in the color, that is, whether it is light or dark. If it is the former, we say that the value is high; if the latter, low.

Tint and Shade. The value of a color is measured by the amount of light in it. A tint is a color lighter than the normal color. The term "tone" is a broad term and refers to shade, tint, etc. Tint is applied to the normal colors when modified with white or increased light, that is, higher in value; while a shade is nearer black than normal color, that is, it is low in value. Example: one-fourth neutralized yellow is a shade of normal yellow, yet it may be nearer white than black on the value scale. Black, white, and gray do not have any definite tone; hence they are called neutral colors. It is difficult to
match them. The neutral tones on durable fabrics are valuable when made into costumes and are adaptable to street and business wear. On the other hand, the light colors and thin fabrics are more appropriate for gay occasions because they suggest a feeling of cheer better than the dark colors.

Tones and shades of colors are very important. A difference in tone may add to or destroy the beauty of the person wearing the costume. For example, a brilliant blue in the costume may make the blue eyes of the wearer colorless, when a soft tone of blue would give added beauty to the person by increasing the attractiveness of the eyes or complexion.

Instead of saying that a blue-eyed, light-haired girl might wear blue, say that she might wear certain tones, but not all blues. The same is true with a dark-haired, brown-eyed girl. She can wear tones of blue.

This contrast may be obtained through difference in hue, in value, or in intensity. For example: a person who wishes to draw attention to blue eyes may wear (1) a hue near blue on the color wheel, i.e., blue-green or blue-violet, (difference in hue), (2) a greyed blue, (difference in intensity), (3) a blue lighter than the eyes (difference in value).

The brilliancy of a color means the amount of strength in it and is often expressed technically as the intensity. To illustrate: if we wish to determine the intensity of red, we compare the color with a standard red, which is the bright red of the spectrum.

Intensity is often used to express the strength or purity of the color. If the color is as brilliant as possible, we say that it is strong; on the other hand, if it is subdued, we say that it is dull or weak. A practical way of subduing colors may be remembered from the adjoining diagram where the colors are placed on the sides and vertices of the triangle.
The opposite colors of opposite sides of the triangle are complementary to each other. That is, red is complementary to green, yellow to purple, blue to orange. If we wish to soften the intensity of any color, we may combine it with its complement.

On the other hand, if we desire to subdue a color by association, we may put a nearly related color with it instead of its complement. To illustrate: if we desire to subdue a too yellow face, we may use yellow trimmings or gold ornaments, but never purple.

Brilliant, intense colors stimulate and please us for a while, but we soon tire of them. They soon fade, spot, and become shabby. On the other hand, neutral colors are less stimulating and less conspicuous, and consequently do not become tiresome.

Neutral shades of different colors in combination appear flat and not attractive. Different hues of the same color will change each other slightly. Red and purple, red and orange, blue and green should not be used together except to brighten each other.

**How to Measure a Color.** When we look at a color, we first determine its name (hue), then its value (high or low), and last its saturation (intensity). One may judge color values by comparing a color with the following line. We may consider a line with white at one end, black at the other end, and gray in the middle, the warm colors to the left and the cool colors to the right of the center line — gray. Note where the color would come in this line.

<table>
<thead>
<tr>
<th>White</th>
<th>Yellow</th>
<th>Orange</th>
<th>Red</th>
<th>Gray</th>
<th>Green</th>
<th>Blue</th>
<th>Purple or Violet</th>
<th>Black</th>
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**Surface and Color.** The surface of the material has a great deal to do with the color saturation. For example, a smooth surface like rayon reflects the whole light at the same angle, while the rough surface of cotton does not give the same degree of reflection; hence, the cotton gives a different tone.

Thin and thick layers of the same medium give different hues. Compare a thin velvet with a thick velvet. The thick velvet with a heavier nap gives a different degree of reflection.
Color Effects. While the untrained may be satisfied with the simple primary colors, artists and others who appreciate beautiful things desire color effects that are more elaborate and complicated and more pleasing than simple colors, that is, harmony of colors. For example, if we visit art galleries or large churches we shall find pictures and stained glass windows representing saints and characters of the Bible. Notice the color of the garments — red and blue — contrasting one primary color, red, with another primary color, blue. Such a color effect is called contrast of color, or contrast harmony, and is very effective.

There are combinations or groups of color that appear pleasing to the eye, or as we say, in harmony. The combinations may be technically named as follows: (1) Dominant harmony, (2) associated or analogous harmony, (3) complementary harmony, (4) contrasting harmony, (5) complex harmony.

Dominant harmonies are combinations of tones of the same color, such as light and dark blue. These color effects are very popular and give an air of distinction. The only objection to them is that they may become monotonous. Analogous harmony consists of combinations of colors that are related to each other in the spectrum. To illustrate: blue, violet, and blue-violet form a very common combination illustrating this principle. That is, since there is an element of blue, there is slight contrast, hence the interest as described above. If complementary colors are in combination, there is a chance for contrast, which shows complementary harmony. Blue-green with a dash of red-orange makes a pleasant combination illustrating complementary harmony.

Placing a combination such as rose with a background of gray is a very common setting, illustrating the principle of contrasting harmony. Black or white, gold or silver, with a color also illustrates contrasting harmony.

When a number of colors are chosen so that no one hue may be seen in all of them, a combination, called complex harmony, is formed that is very attractive. This complex harmony may be illustrated by combining red, orange, blue, violet, yellow, and green.

Colors in Nature. Colors in Nature are harmoniously arranged — white light is made by a wonderful unity of all the other colors. Note the gradation of light and shade in the sky, hill, valley, lake,
etc. The best harmonies of color are found in Nature — in the sky, cloud effects, birds, minerals, animals, and flowers.

The beautiful cloud effects and colorings vary in different parts of the world for the following reasons. Little specks of dust in the air absorb part of the colors of the sunlight and throw off the rest. The part absorbed gives up the exquisite shades of blue which make our sky so beautiful. Sometimes the blue is lighter than at other times because of the condition of the specks of the dust in the air and the angle at which the sunlight strikes the particles.

Shades and Shadows. When light strikes a fold or piece of cloth that is opaque it is turned back in the direction from which it comes, and the part on the other side of the material which intercepts the light goes into shade and shadow results. In other words, the shadow of the cloth is produced by cutting off one or more light rays. Shadows in the day are not so dark as shadows at night because there are so many reflections of light from other sources.

Good Coloring. The principles of proportion, contrast, rhythm, harmony, and unity apply to color as well as to design. This means that color must be properly balanced. Therefore, if colors differ in area, they must make up this difference in intensity in order to be in good proportion. In order to create interest there must be difference in either hue, value, or intensity to form proper contrast. Repetition of color produces a rhythmic effect that may be pleasing. Finally, all colors must be properly blended and balanced according to color harmony in order to give unity to a design.

We should remember the following facts in considering proportion, etc., of colors in wearing apparel:

I. In order that color may be interesting it is necessary to have different areas of colors. The same areas of color appear monotonous. To illustrate: equal areas of dark and white are not as interesting as large dark areas and smaller light areas. Hence we should select areas according to the following rules:

II. Dark color values seem to appear heavier than light ones, hence dark clothing, etc., should be at the bottom (skirt) while the light color values should be at the top (blouse) to preserve
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the proper proportion in color. Otherwise the proportion in color may appear top heavy.

III. Neutralized colors may be used in large areas and intense colors in small areas in order to retain proper proportion.

IV. Complementary colors tend to intensify each other, hence great care should be exercised in selecting colors to harmonize proportionally with the skin. Colors of wearing apparel that oppose the dominant color of the skin will naturally emphasize the color of the face.

Psychology of Color. The action of color on the mind, like the action of lines, is explained by the science of psychology. In other words, the ideas, emotions, etc., aroused in the mind by color are called the psychological effect of color. The relation of the eye to color sensation has been the subject of much investigation, and the following theory of color vision is accepted. There are three primary color sensations produced in the eye: namely, those of red, green, and violet. The theory is that the retina is made up of three sets of nerves, one sensitive to red, one sensitive to green, and one sensitive to violet. When all are stimulated at the same time, the result is the sensation of white light. When only one or two are stimulated, the result is colored light. These nerves differ in sensitiveness in different people, hence we find some are weak in detecting or matching color. This is called color blindness. Some people can not distinguish colors and cannot distinguish shades.

Each color arouses in our mind association of ideas. While these ideas may not be the same for different persons, nevertheless there are certain tendencies aroused in our minds by each color. To illustrate: Red has always been associated with fire, excitement, passion, and revolt, and also associated with the devil or the dragon. Blue and black are associated with pessimism and act as depressents. Note the expression, “He is as blue as ink.” Black Friday was a day in the financial world. Pink is associated with optimism, as in the expression, “A rosy point of view.” Purple is a sign of power, as “royal purple.”

Complexion. Complexion is a term we use referring to the coloring of the face, hair, eyes, and neck. This coloring is due to the
coloring substance or pigment in the eye, skin, and hair, and to the influence of the weather, hereditary causes, etc.

Speaking broadly we often think of two distinct types of complexion: (1) Light hair and blue eyes, and (2) dark hair and dark eyes. Of course there are many shades or degrees between these two types which we shall consider later, but every one may be roughly classified as either dark or fair. The color of fair hair is the result of a mixture of red, yellow, and brown, either tone being more or less prominent. Light or fair hair may be considered as a pale, subdued orange-brown. The color of the fair skin is similar except that it has a lower tone, with red in parts of the cheek. The blue of the eyes forms a contrast harmony with the skin.

On the other hand, the dark eyes, eyebrows, and hair of the dark type, contrast in tone and color with the skin. The colors adapted to the light and dark-hair type are those which produce contrasts.

As the body grows in age, the color of the hair, skin, etc., changes accordingly. To illustrate: One's complexion changes from childhood with the smooth, pink-and-white complexion of youth to the yellow (sallow complexion) and wrinkled skin of age, and the hair becomes streaked with gray. But in any period there is always a proper harmony between the color of the hair and the color of the skin. Therefore, any attempt to change the color of the hair to make it appear younger, (such as dyeing the hair), is quickly discovered because it brings out the age more sharply by making the face ghastly. It accords best with nature that as we grow older we should begin to wear darker colors or shades.

The Skin. The skin, especially of the face and neck, reflects more or less the colors that are near. The texture or smoothness of the skin determines the degree of its reflective power. A smooth skin reflects the colors more than a coarse, granular skin. This fact should be considered in selecting colors for an individual.

There is a wide variety of skin texture and coloring. There is a great difference between the skin of a baby, the skin of a young person, of a mature person, and of an old one. There are racial differences that show plainly in the quality and texture of the skin. It is not only in color that skins differ.

One of the most effective ways of determining the proper color of clothes for a person is to note the color of the individual. One's
color is determined by that of the hair and eyes and the complexion or color of the skin. A person may have "much color" or "little color." If she has much color, then the color of the fabrics should be selected to subdue the color of the individual. On the other hand, if the person has little or no color, the fabrics should be selected to give color to the face.

The purpose of clothing is to make one more pleasing and attractive by bringing out the artistic points of the ideal human form. This is done by means of the proper color as well as the proper lines. Since each person's skin, eyes, hair, etc., differ in color we must have the proper color in the clothing to harmonize with the color of the skin, eyes, and hair.

The most effective method of selecting the proper color and texture for your costume is to place the fabric about your shoulder, as shown in the picture, and note, as you look in the glass, the effect of the different fabrics on your face, since that is the most conspicuous part of the body.

Since the psychology of color expresses personality, characteristics, and habits, the designer always considers these when he plans a costume.

Color in dress affects the wearer and those with whom she comes in contact. Everyone is influenced by the colors they wear. For example, there are certain colors that make us appear gay because they stimulate us. One's desires in colors are due in large measure to (1) inheritance, (2) education, and (3) condition in life. People of the warm countries, being influenced by the bright colors of their environment, crave the strong colors more than those in the cold countries. The untrained and the young prefer the bright colors, but as we grow older and become experienced we prefer the shades and tones that appeal to the experienced.

Colors for clothes should be made to suit skin tints, but when a figure is too broad it is necessary to modify this selection. In other words, colors that are becoming to a slender, short type are not
always right for the woman of similar complexion who is short and thick-set. To illustrate: Navy blue is a color that will make a short stout appear thinner and is always attractive regardless of changing styles for different colors.

Dark colors such as dark blue, dark green, dark brown, dark gray, and dull surfaces tend to make one look thin, while light colors and bright surfaces tend to make one appear large. Therefore, stout people should use dark colors or neutral shades and dull-surfaced fabrics of inconspicuous design.

Red denotes intensity and is a striking color for the vivacious brunette or dazzling blonde. On the other hand, yellow expresses light and cheerfulness, so it can be used, especially in the neutralized tones, with any type. Blue gives coolness, distance, and reserve. Hence it is an admirable color, especially in the dark shades, for a business costume. Green, the color of the grass, is refreshing, restful, and cool, and in the light shades is excellent for summer. Brown is a popular color because it is retiring and sedate, although not dismal or depressing. It is a mixture of crimson and ochre, with black as a basis. When russet and olive are mixed a hue called maroon is formed. Notice that there is an excess of red.

**Mourning Colors.** — The colors used in mourning by different nations show how different colors are interpreted. The custom of showing grief by outward signs is universal. In the United States and Europe the usual color for mourning is black; though white is mixed with black for ordinary mourning, and is occasionally employed at the death of children and maidens. In China, white is invariably the color adopted for mourning; in Turkey, blue or violet; in Egypt, yellow; in Ethiopia, brown. Persia adopts pale brown; Burma, yellow; Tartary, deep, blue; Asia Minor, sky blue. The Spartan and Roman ladies mourned in white; and the same color prevailed formerly in Castile on the death of their princess. Kings and cardinals mourn in purple. Each person has its reasons for the particular color worn: white is supposed to denote purity; yellow that death is the end of human hopes, and flowers when they fade become yellow. Brown denotes the earth, whither the dead return. Black, the privations of life, as being the privation of light. Blue expresses the happiness which it is hoped the deceased will enjoy in the land beyond the skies; and purple or
violet, sorrow on the one side and hope on the other, as being a mixture of black and blue.

**Value of Color.** Well-chosen colorings in dress add greatly to the pleasures of life and have, no doubt, an effect on the health and spirits of cultured people. For example, it has been found that colors like primrose yellow, sky blue, spring green, apple-blossom pink, the colors of spring, are the colors of recuperation and very healthful to nervous people.

We must bear in mind that the emotional effects or sensations and thrills produced by color depend largely on the setting and circumstances and also on the style and fashion of the occasion of using the color. To illustrate: dark green and pink would be considered an excellent combination in the flower garden but would not be desirable in a costume. Hence color combinations that we frequently see and admire may not be always suitable as combinations of color for clothing.

**Color Fatigue.** If the eye looks for a quarter of a minute at a dark object against a very bright sky and then the view is transferred to another part of the sky, the dark object will appear brighter because there is an after-image of brightness remaining on the retina. We see other effects like the following resulting from the after-image on the retina, in turn due to retinal fatigue:

(a) A bright silk background is used in showcases in displaying cotton goods. The after-image of the luster of the silk is carried over to the dullness of the cotton and makes it appear to advantage.

(b) If brown is placed side by side with light red, the brown will appear greenish; and if purple is placed side by side with red, the purple will appear more blue, due to the fact that complementary colors in contact tend to enrich each other by after-images.

(c) The mind becomes tired of the same color or the reflection of the same color due to the sensitiveness of the nerves of the eye. In fact, a chemical change takes place in the eye when exposed for a long time to the same color and gives us a sense of mental repulsion. A new shade in color is always refreshing, while the color of last year appears flat and stale. We often note that the change in colors is a healthy one.
Line Effects. The line effect of clothing is formed also by difference in color, texture, luster, etc. The line or shadow may be very slight, yet produce a favorable or unfavorable part in the design. The retina is so very sensitive that difference in color or difference in texture of a fabric produces the effect of an after-image of a line. To illustrate: color at the extremities of the body — head, feet, arms — gives an elongation or lengthening after-image. When a costume is made of two different materials or finishes, the junction conveys an after-image of a line in the direction of the fabrics. Short sleeves give an after-image of a horizontal line, which gives an after-image of breadth or width.

Fashion in Color. Each season we find new ideas or fashions in color, as well as new design and materials in costumes. These new ideas of colors are simply new shades of the familiar colors. From both an attractive and artistic point of view it is absolutely necessary that every part of a costume should harmonize and should be selected with regard for every other part. In order to do this successfully, representatives of all the fashion industries — cloth, dyestuffs, shoe and leather, hosiery, millinery, and garment manufacturers — agree six months ahead of time on colors as well as styles. These colors are of two types — staples and novelties. The staples are those always worn, such as navy blue, seal brown, lavender, etc. Then in addition a certain number of special colors, according to the style tendencies, are also agreed upon, and these colors will be promoted. From these staples and novelty colors five different cards of colors, called seasonal cards, are made each year: one each for silk, shoe and leather, millinery, hosiery, and woolens. Each color has a number, cable number, and a name, and they never change. In this way a color name is standardized. Up to a few years ago there were as many as forty-two blues called navy. Since colors have been standardized three navy blues are the ones selected, each designated by a number.

As a result of this method of standardization of color the cost
of manufacture is reduced so that it is possible for one with a small salary to be smartly and harmoniously dressed by selecting one dominant color for her wardrobe and then selecting each detail with that color in mind. This is possible at present because the shoe manufacturers know what the hat and garment producers are going to do through the interlocking committee on color and style.

Ensemble. The idea of having all parts of clothing harmonize (often spoken of as the ensemble idea) became the style in 1927. This assisted many who had no sense of color grouping. Now, a woman of poor taste in color can select very easily the proper hat, stockings, shoes, etc., with the assistance of the saleslady who has been drilled in the proper combinations.

Color and Line in Costume. The costume in which a woman feels, looks, and acts best is one with a perfect combination of color and line. Lines are pretty well taken care of for the average woman by dress merchants, but color is something the woman has to determine for herself.

Line, of course, has much to do with the outline of the form (silhouette), its slenderness or bulk, but where line has one duty to perform, color may accomplish its magic in different ways, such as adding glints to golden hair, clarifying a skin, supplementing the brilliancy of the eyes, and so on.

While color charts may serve as guides, they cannot be accepted as infallible pilots. The difficulty with color charts is that women have to be classified into types, and the generalization is too broad to take account of all varieties of pigmentation, hair shades, and eye colorings, so the perfect test rests with the individual in suiting color to her own particular skin, hair, and eyes.

Self Style Analysis. One should make a style analysis before selecting a costume. This may be done by looking in a triple mirror and noting very carefully one's silhouette, that is, the height, width, coloring, etc., and record mentally:

1. Strong and weak lines in contour, that is, the lines that are pleasing and those not attractive.
2. Length and breadth and compare them with the standard form.
3. The proportion and balances of the masses compared to the standard form.
4. Coloring of hair and complexion.
5. Personality — disposition.

Then one may intelligently determine the kind of materials and construct her design. While it is impossible to change the figure so as to make its proportions those of the ideal figure, one can be made to appear like the normal figure by emphasizing certain lines of the costume and minimizing other lines.

Apply the knowledge of the theory of light and color harmony to the personal coloring of oneself or the one under consideration and decide as follows what she can and cannot wear:

1. Decide on the personality and size of the person. Make note of the most pleasing features — hair, complexion, and eyes — and then make them conspicuous by emphasis with color and line. Since the eye is the center of the glance in conversation, it is only natural that we should select always colors that will bring out the color of eyes. Remember that red denotes intensity and may be used effectively for the vivacious brunettes and dazzling blonds. On the other hand, yellow expresses light and cheerfulness and may be used. The neutralized tones of yellow may be used by all types.

2. Blue, the color of the water, conveys an impression of coolness or reserve, and may be used for business costumes. Neutral tones in costumes made of durable material should be used for street and business.

3. A street costume should always be selected for color, as it will be seen by the strongest light.

4. Light colors should be used for festivals as they convey cheerfulness.

This idea of style analysis is used in many large stores. To illustrate: one store has a member of the style consultant’s staff who, when called upon to advise a customer, studies her
figure, hair, and complexion, and then offers authoritative information on the most suitable of the new modes. In the selection of accessories she will be found especially valuable. She knows the correct hat, the suitable shoe, and harmonious glove and hosiery for each type, as well as other important details, such as the pocketbook and boutonniere.

QUESTIONS

1. Why is color important in clothing?
2. What is meant by the expression (a) sheer textiles, (b) transparent, (c) translucent, (d) opaque? Name several textiles showing these qualities.
3. Explain the importance of (a) reflected, (b) refracted, (c) transmitted light in textiles.
4. (a) What is meant by the grain of the cloth? (b) Why is it necessary to have matched fabrics with the grain running in the same direction?
5. Explain the theory of light.
6. Tell the difference between (a) primary and (b) secondary colors, and (c) tertiary colors.
7. What is meant by the expression (a) warm colors, (b) cool colors? Give examples of each.
8. Tell the difference between (a) advancing colors and (b) retiring colors.
9. What are the advantages and disadvantages of the use of the primary colors in clothing?
10. What is the simplest method of naming colors?
11. (a) Describe briefly the meaning of pastel colors. (b) What objection may be raised to the use of pastel colors in clothing?
12. What is the difference between (a) white, (b) black, and (c) gray. State the advantages and disadvantages of each.
13. Explain why some textiles are red, others are black and white.
14. Describe the artistic value in clothing of (a) red, (b) brown.
15. In a general way, state the colors best suited for (a) youth, (b) elders.
16. What effect has material on colors?
17. Compare the artistic value for clothing of (a) wool, (b) cotton, (c) silk, (d) rayon, and (e) linen of the same color.
18. What causes worsteds to have more luster than woolens?
19. What effect has surrounding light on the color of textiles?
20. What causes shades and shadows in fabrics of costumes?
21. Explain why the principles of (a) proportion, (b) contrast, (c) rhythm, (d) unity, (e) harmony apply to the coloring of design in textiles.

22. (a) What is meant by color values? (b) How is color measured?
23. What is the difference between (a) tint or tone and (b) shade?
24. When we speak of neutral colors, what do we mean?
25. Describe the difference between brilliancy and intensity of a color.
26. How may one (a) soften the intensity of a color? (b) Subdue a color?
27. What are the artistic values in clothing or textiles of (a) brilliant, intense colors and (b) neutral colors?
28. How may one measure a color?
29. What effect has the surface of a textile on the color of clothing? Explain, with examples.
30. (a) Describe the different artistic color effects or harmonies. (b) Give examples.
31. Describe briefly how (a) colored cloud effects and (b) sky blue effects are produced.
32. Explain with examples the principles of psychology of colors.
33. Why do colors of costumes change from season to season?
34. State the advantages and disadvantages from both an artistic and commercial point of view of color standardization.
35. (a) What is complexion? (b) Name the types of complexion. (c) State the coloring of each type. (d) Give the best combinations of color for the different types. (e) State the reasons for your answer.
36. How may clothing bring out the artistic coloring of the complexion?
37. What effect is produced when one attempts to dye his or her hair to appear younger?
38. (a) State the method you would use in determining the proper color of clothes for a person. (b) State an effective method of verifying your selection.
39. Why does the eye grow "tired" of colors?
40. Explain the value and purpose of self-style analysis.