case is the same or different? Referring, in the first instance, to the two other colours in each set, we find that they are not common, but are the very reverse. They are not only differently named, but the one set contains the mean colour between two colours of the other set and is therefore opposite, or complementary to the third. Thus green is the mean colour between, or may be obtained by the mixture of the primary pigments, blue and yellow, and is complementary to the remaining primary red Violet is the mean colour between, or may be obtained by the mixture of the primary pigments, red and blue, and is complementary to the remaining primary yellow. Anyone who has mixed pigments knows these assertions to be facts. Yellow is the mean colours between, or may be obtained by the combination of red and green light, and is complementary to the remaining primary sensation, violet. Blue is the mean colour between, or may be obtained by the combination of green and violet light, and is complementary to the remaining primary sensation, named by the physicist red. Physical experiments have proved these statements.

The term red, to though common both sets, cannot be the exact colour obtained by two different combinations, or be produced by the mixture of itself with another colour; such a suggestion seems absurd. It cannot, if we are to understand a distinct hue by the name, be the mean colour between itself and both violet and yellow; that is, the particular hue of red will not remain the same when violet or yellow are added to it. The difference of hue between a red and violet mixture and a red and yellow mixture would be very considerable indeed, about as far apart as two reds could well be. Yet if the two other colors of the one set, when combined produce one of the colours of the other set, it seems reasonable to conclude that the remaining colour red should, when similarly combined, produce a similar result. According to this, however, red and violet produce red, and red and yellow produce red! Two different combinations seem to produce the same result, which is impossible, for the two resulting hues would be, as I have just pointed out, as different as they well could be under the general name of one colour.

Red then seems to be a very general and ambiguous term, for it is evident that the hue of red in the one set is very different from that in the other, that the artist's primary red pigment, and the physicist's primary red sensation, are totally dissimilar—the one being of a crimson or violet hue, the other of an orange hue. It seems desirable, therefore, that either the artist or the physicist, or both, should adopt some more definite term to describe a colour in which they can only agree in name and not in fact, for much confusion, and apparent antagonism, between the art and science of colors, as regards the primary colours, has already been occasioned by this indefiniteness of meaning.

The ambiguity regarding the names of colours is well known and to it much uncertainty may have been due; indeed ambiguity in so relative a subject as colour can hardly be avoided. It requires but a very elementary knowledge of colour effects to know that colours may be made to appear very different by changing, not themselves, but those with which they are associated, or juxtaposed. Red may be made to appear orange or crimson, green may be made to appear blue or yellow, and soon; it entirely depends on what colours are put next to them. Chevreul's book is full of such instances. It is not, therefore, at all extraordinary that colours should be misnamed, when they have such chameleon-like properties. A colour also appears very different under different conditions of light. Two rooms, for instance, coloured exactly alike, but one having a southern, and the other a northern aspect, would appear very different. The yellow light of gas has, of course, a marked effect, as also the coloured light of stained glass. Ambiguity, however, in colour is not entirely due to these causes. Without even taking into account the variableness of the colour sense in different individuals, which is undoubtedly very great, there is another important point, and that is the very gradual way by which the most opposite colours may be connected. There are no distinct lines, as it were, between colours. It would be difficult, indeed impossible, to point out exactly where the red, green, or violet of the prismatic image began or ended; and when out of the innumerable perceivable tints we have to name three, or six, principal colours, it is impossible that the exact hue of each of these colours can be distinctly and definitely described. Only an approximate idea can therefore be given. Of reds we have orange and crimson reds, and all the hues between these two extremes, yet all are reds; of yellows we have orange and greenish yellows, yet all are yellows; and of blues we have greenish and violet blues, yet all are blues. The six principal colours only have been named; but when it is borne in mind that it has been estimated that the eye can distinguish not less than 2,000,000 distinct tints of colour, the difficulty of determining their exact hues will be at once understood.

It is desirable however, that the particular hues of the primary pigment colours and the primary sensations of colour should be as nearly as possible defined, so that we may ascertain their relationship to each other, and also whether there is a difference of hue between the so-called primary red pigment and the primary sensation named red.

The hue of a primary pigment is decided by that hue which will mix with both of the other primary pigments—in other words, with the greatest number of other colours, and still retain brightness, or not cause the compound colour to become "dirty" or "muddy." This is ascertained by practical experience rather than by physical experiment. Most persons know, for instance, that blue and yellow pigments when mixed together produce green, and that blue and red produce violet. The question is, what particular hue of blue will produce the most brilliant green and violet when mixed with yellow and red respectively? It is a simple matter to get one hue of blue that will produce a good green, and another that will produce a good violet, but we have to decide on one particular hue that will mix well with both.

Generally speaking, the hue of each primary pigment tends towards blue, or away from red. The primary blue pigment is of a greenish rather than of a violet hue; this particular hue of blue mixes with both the other primary pigments, yellow and red, with less loss of colour than a violet-blue would do. Let us practically apply this: let Prussian blue represent the primary greenish blue, and ultramarine the violet-blue. It will be observed that Prussian blue mixes well with red on the one hand, and with yellow on the other, producing tolerably bright violet and green. Ultramarine, however, though it mixes even better with the red (because being a violet or reddish blue it is naturally more analagous or sympathetic with red), at once loses colour, and produces a less bright or "dirty" effect when mixed with yellow. Hence the hue of Prussian blue is nearer the hue of the primary pigment blue than the hue of ultramarine. The primary blue pigment is consequently of a greenish rather than a violet hue.

The hue of the primary yellow pigment is in like manner that particular hue of yellow, which will, when mixed with blue and red respectively, produce bright green and orange. a yellow that has a slight greenish rather than an orange tint, King's yellow approaches, as near as most yellow pigments,