

## From 1855: a Review



### *The Principles of Harmony and Contrast of Colours, and their Applications to the Arts.*

By M. E. CHEVREUL, Membre de l'Institut de France, &c., &c. Translated from the French by CHARLES MARTEL. London: Longman & Co. 1854.

Chevreul is a remarkable example of distinction won in departments of enquiry so different, that posterity is likely to halve or double him, and insist on the existence of at least of two Messieurs Chevreul, the one famous amongst chemists, as the discoverer of the true nature of Fatty bodies; the other, a high authority among Natural Philosophers and Artists, as a discoverer of new relations among colours. There is, however, but one Chevreul, and his work on colour, which sprang out of his labours as chemist to the Gobelins tapestry dye-works, stands in natural and pleasing association with his purely chemical investigations.

His views upon colour have been so long and so highly appreciated on the Continent, and especially in France, that our foreign brethren have naturally wondered that we have been so tardy in acknowledging their value, especially in their application to the practical chromatic arts. Our natural philosophers did not overlook their importance, as our university libraries can testify; and in 1848, the Cavendish Society published an admirable abstract of Chevreul's views, of the existence of which the translator of the work before us appears to be quite ignorant. It was not, however, till the Great Exhibition in 1851, that the conspicuous superiority of the French coloured designs drove our workmen to discover the cause of their own inferiority, and the continual reference to Chevreul as one of the great authors of the skilful use of colours by the French dyers, weavers, and other workers in the chromatic arts, turned the attention of practical men in this country to his book. The volume before us is the fruit of the interest thus awakened in the author's researches, and we welcome its appearance in an English form.

Large as the work is, it is the demonstration of a single fertile principle, which its author calls the "Law of the Simultaneous Contrast of Colours."

The purport of this law, is to point out the singular fact, that when two coloured objects, such for example as a red and a green ribbon, are placed side by side, or so near each other as to be seen together, the quality and intensity of their respective colours do not appear the same as when each is looked at separately. Thus, the same red ribbon will have a different tint if seen side by side with a green, with a yellow, and with a blue ribbon, and these colours will in their turn be modified to the eye, by their juxtaposition with red. This is the *Simultaneous Contrast of Colour*. If, again, two shades or tints of the *same* colour be placed together,—for example, a light red, and a dark red, the latter will appear darker, and the former lighter, than either does when seen alone. This is the *Simultaneous Contrast of Tone*; the word "tone" being used by Chevreul as synonymous with intensity of tint or shade, not as referring to any real or supposed analogy between colour and sound.

So far as tone is concerned, the rule is sufficiently

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noticed above. As for contrast of colour, it occurs according to the principle that every colour adds its complementary to the colour it is placed near or beside. Thus, red causes other colours near it to appear as if its complementary green were added to them. Green tints them with red. Blue adds to other colours orange. Yellow adds to them purple. The appearance of any coloured body beside another coloured body, is thus different from what it is when seen alone or on a white ground, and the difference is such as would be produced by adding to the isolated colour so much of the complement of the colour which by its proximity, modifies it.

It had long been known, as Chevreul amply acknowledges, that when the eye is fatigued by looking at one colour it sees its complementary; but it was reserved for him to show that fatigue is not essential to the development of the phenomenon, or rather that there are two phenomena which have been confounded together,—the one, long observed, where the eye gazing long on one colour, sees thereafter on white surfaces its complementary; the other that discovered by Chevreul, where the colour and its complement are seen side by side. The former he names the *Successive* contrast; his own discovery the *Simultaneous* Contrast of Colours; and he points out very clearly that the phenomena may intermingle so as to give rise to what he calls *Mixed* contrast of colours.

The application of those observations to the practice of the chromatic arts is carried out by Chevreul in the most elaborate and interesting way. With the utmost patience, conscientiousness, and sagacity, he illustrates the light which his discoveries throw on the details of painting, glass-staining,

tapestry-weaving, carpet-making, the selection of furniture, the arrangement of flowers in gardens, the provision of uniforms for soldiers, the choice of linings for ladies' bonnets, and much else.

Those things lie beyond our sphere, but we could wish that some of our writers who publish on the Harmony of Colours in organised beings would study Chevreul. They might find that they had been long anticipated, and even surpassed. Much, for example, has been said regarding the occurrence of complementary colours in flowers and birds, as if the discovery were something new. It is not only old, but those who read the book will find that an explanation (as we venture at least to suggest) of the pleasure with which the complementary colours, such as red and green associated in plants and in birds, is to be found in the fact pointed out by Chevreul, that when complementary colours are placed together, each exalts the other, so that red makes green greener, and green makes red redder, than either would appear alone. The eye is gratified with the full colour in these cases not in virtue of some vague recognition of complementaries, but because by no other arrangement can two colours be made to show so fully and richly.

We cannot forbear stating that justice is not done to Chevreul in the present translation. It is awkward, inelegant, often barbarous in style, and sometimes quite unintelligible. Uncoloured diagrams, also, are employed in illustrating the work, but they are most inadequate; and the plea for omitting colours, that the reader can make such for himself is untenable; for a reader skilful enough to do that need not study Chevreul.