

11.
Dr Young's
colour
theory.

The beginnings of this line of reasoning are to be found in the writings of Thomas Young, who here, as in several other directions, "marched far in advance of his age."¹ During the last decade of the eighteenth century Young had been occupied with the study of the phenomena of Light and Colours; and, being a student of medicine, he had given equal attention to the physical phenomena and the physiological sensations of Light, going back to the beginnings laid in Newton's writings on these two important branches of Optics.² I have treated of his epoch-making discoveries in physical optics in an earlier chapter. As to the physiological problem of colour sensations, he likewise reviewed Newton's work, and especially took up the remarkable fact noted by Newton, that it appears possible to refer the great variety of colour sensations to three primary elements, out of which the whole wealth of the colour scale—varying in intensity, tint, and saturation—can be made up. In two distinct points he made a definite

¹ Note, in many passages of Helmholtz's 'Physiologische Optik' (2nd ed., Braunschweig, 1896), and his often-quoted 'Vorträge und Reden,' the high esteem in which he held the work of Young.

² A very succinct and exhaustive account of how Young arrived at his colour theory is given in a paper by A. M. Mayer, of New Jersey, in the 'Phil. Magazine' for 1876 (5th series, vol. i. p. 111). Young first selected red, yellow, and blue as the three simple colour-sensations, but later modified his view in consequence of the experiments of Wollaston between the years 1802 and 1807. How little Young's theory was thought of may be seen from the words of Helm-

holtz, quoted by Mayer (p. 114): "The theory of colour, with all these marvellous and complicated relations, was a riddle which Goethe in vain attempted to solve; nor were we physicists and physiologists more successful. I include myself in the number: for I long toiled at the task without getting any nearer my object, until at last I found that a wonderfully simple solution had been discovered at the beginning of this century, and had been in print ever since for any one to read who chose. This solution was found out and published by the same Thomas Young who first showed the right method of arriving at the interpretation of Egyptian hieroglyphics."