

Dr. Young have rendered it probable that some change takes place in the figure of the lens, whereby its convexity, and perhaps, also, its distance from the retina, are increased. He has shown, by a very decisive experiment, that any change which may take place in the convexity of the cornea has but little share in the production of the effect; for the eye retains its power of adaptation when immersed in water, in which the form of the cornea can in no respect influence the refraction.

But the rays of light are of different kinds; some exciting the sensation of red, others of yellow, and others again of blue; and these different species of light are refracted, under similar circumstances, in different degrees. Hence, the more refrangible rays, that is, the violet and the blue, are brought to a nearer focus, than those which are less refrangible, that is, the orange and the red rays; and this want of coincidence in the points of convergence of these different rays, (all of which enter into the composition of white light,) necessarily impairs the distinctness of all the images produced by refraction, shading off their outlines with various colours, even when the object itself is colourless. This defect, which is incident to the power of a simple lens, and which is termed the *Chromatic Aberration*, is remedied almost perfectly in the eye, by the nice adjustment of the powers of the different refracting media, which the rays of light have to traverse before they arrive at the retina, producing what is called an *achromatic* combination;* and it is found that the eye, though not an absolutely achromatic instrument, as was asserted by Euler,† is yet sufficiently so for all the ordinary practical purposes of life.

The object, then, of the whole apparatus appended to the optic nerve, is to form inverted images of external objects on the retina, which, as we have seen, is the expanded ex-

* For the exposition of the principles on which these achromatic combinations of lenses correct this source of aberration, I must refer to works which treat professedly on Optics.

† For the rectification of this error we are indebted to Dr. Young.