

absorbing media, I cannot consider that he has established his point as an exception to Newton's doctrine. In the first place, the analysis of light into *three* colors appears to be quite arbitrary, granting all his experimental facts. I do not see why, using other media, he might not just as well have obtained other elementary colors. In the next place, this cannot be called an *analysis* in the same sense as Newton's analysis, except the relation between the two is shown. Is it meant that Newton's experiments prove nothing? Or is Newton's conclusion allowed to be true of light which has not been analysed by absorption? And where are we to find such light, since the atmosphere absorbs? But, I must add, in the third place, that with a very sincere admiration of Sir D. Brewster's skill as an experimenter, I think his experiment requires, not only limitation, but confirmation by other experimenters. Mr. Airy repeated the experiments with about thirty different absorbing substances, and could not satisfy himself that in any case they changed the color of a ray of given refractive power. These experiments were described by him at a meeting of the Cambridge Philosophical Society.]

We now proceed to the corrections which the next generation introduced into the details of this doctrine.

CHAPTER IV.

DISCOVERY OF ACHROMATISM.

THE discovery that the laws of refractive dispersion of different substances were such as to allow of combinations which neutralized the dispersion without neutralizing the refraction, is one which has hitherto been of more value to art than to science. The property has no definite bearing, which has yet been satisfactorily explained, upon the *theory* of light; but it is of the greatest importance in its application to the construction of telescopes; and it excited the more notice, in consequence of the prejudices and difficulties which for a time retarded the discovery.

Newton conceived that he had proved by experiment,¹ that light

¹ *Opticks*, B. i. p. ii. Prop. 3.