of separating the differently-coloured rays and spreading them over an angular space greater or less in proportion to the total deviation of some one ray, taken as a standard, from its former course, is called in optics the "dispersive power" of the medium. It differs very widely in different media, and in consequence, the lengths of the spectra which they produce, corresponding to one and the same mean or average refraction, differ accordingly. Thus, for example, the total lengths of the spectra produced by prisms of fluorspar, water, diamond, flint glass, and oil of cassia (the mean refractions being the same), are to each other in the proportions of the numbers 22, 35, 38, 48, and 139.

(36.) This quality of dispersion stands in very distinct relation to the chemical constitution of the refracting medium. Thus it is found that all the compounds of lead, whether in liquid solution, natural or artificial crystals, or glasses into which that metal enters largely, possess very high dispersive powers; while those into which strontia enters exhibit remarkably low ones. It is on this property of lead that the formation of highly dispersive glasses, to imitate the brilliant colours of gems, and to give the vivid prismatic colours of the pendants of chandeliers by candle-light, depends, as well as that far more important application which, by the combination of two glasses of different dispersive powers, the one containing lead, the other none, enables the optician to effect refraction without producing colour, and so to construct that admirable instrument, *the achromatic telescope.*

(37.) Not only are the *total lengths* of the spectra pro-