screen illuminated by light emanating from a single bright point O (Fig. 10), from which is propagated a series of equidistant spherical waves corresponding to light of any one refrangibility, and therefore distant from each other by one entire undulation of such light (say, to fix our ideas, a 50,000th of an inch). If O P be joined, intersecting the surface of any one such wave, at a given distance, O A from O in A; P A will be the shortest line that can be drawn from P to that surface. Suppose, now, we take on either side of A a series of points B, *b*; C, *c*; D, *d*, &c., progressively more distant (by pairs) from P than A is, by 1, 2, 3, &c., hundred-thousandths of an inch, or semi-undulations of the light under consideration; and let the whole figure be conceived as turned round on O P as an axis. Then these points will mark off on the spherical surface of the wave, a central circular area (call it the area A), and a series of concentric rings or rather zones of the waves (call them in succession B, C, D, &c.), surrounding it, like those represented in Fig. 7, from every point in each one of which the light sent to P will reach it in more or less discordance of phase, with that which reaches it from the next in succession. Thus if all the vibrations propagated from the central circle (A) arrive at P in a phase of compression, all these *simultaneously* reaching it from the zone (B) will arrive in a phase of expansion, all from (C) again in one of compression, and so on alternately. Now if the distance A P of P from the wave be anything considerable, suppose a few feet or even inches, it will be *enormously* great in proportion to one semi-