any point in the surface is struck by the wave it will be set in undulatory motion and propagate from it a movement which will run out spherically from that point in all directions with such (uniform) velocity as belongs to the luminous undulation *in* the medium. When, therefore, the wave has reached the position E e, E will just have begun to move; the internal wave propagated from D will have travelled during one second, from C two, from B three seconds,—and the motion, in virtue of these, respectively, will have extended to the surfaces of spheres about those points as centres, having radii in the proportions 1, 2, 3, so that a plane passing through E, which touches one of them, will touch them all, and the same is true for all points intermediate between these. Such a plane will define *the limit up to which the movement has reached* within the medium when the exterior wave has the position E e, and will, therefore, be *the front of a plane wave* advancing within it. If the velocity of the undulation within the medium be the same as without, D O, C N, B M, the radii of our spheres will be equal to E H, E G, E F, the spaces run over in one, two, three seconds outside, and the touching plane E O N M will evidently be a continuation of the exterior plane wave e E. In this case, then, there is no *refraction*, the direction of the interior ray B M being the same as A B, perpendicular to the exterior wave. But suppose the velocity within the medium less than that without. In that case the radii of our spheres D R, C Q, B P, will be less than D O, C N, B M, and in a constant proportion. The plane E P touching them all then, or the front of