direction the velocities of propagation of the ordinary and extraordinary rays within the crystal are the same, and that therefore, supposing the two corresponding undulations propagated from the same point in its surface to run out internally, the one in the form of a spherical, the other of a spheroidal shell, these shells will have a common axis, viz. :—the shorter axis of the spheroid, which will therefore wholly include the sphere, being in contact with it at the poles of the spheroid. *Cæteris paribus*, too, it is equally obvious that, when we come to consider different sorts of crystals possessing the property of double refraction, the intensity of this quality, or the amount of angular separation of the two refracted rays at the same incidence, will be determined by the greater or less amount of ellipticity of the spheroid in question. Should this ellipticity be *nil*, the spheroid will coincide over its whole extent with the sphere, and there will be no double refraction. This is the case with all crystallized bodies, whether mineral or artificial salts, whose primitive form is the cube. In some cases (comparatively rare ones), of which quartz or common rock crystal is an example, the spheroid is of the kind called *prolate*, or one formed by the revolution of an ellipse round its *longest* diameter, and is therefore wholly contained within the sphere. In these, then, the velocity of the extraordinary ray within the crystal is less than that of the ordinary; and the latter ray, which is the more refracted of the two in Iceland spar, is in such crystals the less so. On comparing different crystals, however, it is not found (which perhaps might have been expected) that the el-