

markable discovery which introduced the term POLARIZATION into optical language. "We find," says he, "that light acquires properties which are relative only to the sides of the ray—which are the same for the north and south sides of the ray" (*i.e.*, of a *vertical* ray), "using the points of the compass for description's sake only, and which are different when we go from the north and south to the east and west sides of the ray." The polarization of light has in fact been an integral part of the science of optics (wanting only a name to designate it) ever since this suggestion of Newton, who derived it from the contemplation of one of what Bacon calls "*instantiæ luciferæ*," *luminiferous instances*, exhibiting the property of "nature searched after" "in an eminent manner," or in its clearest or most manifest form; and who described with the utmost clearness and precision the phænomenon in which its manifestation consisted in the special case before him.\* We shall, therefore, approach the subject from Newton's point of view, choosing for our illustration the very phænomenon which led him to the singular conclusion embodied in his query.

\* The same phænomenon is described, and with no less clearness and precision, by Huyghens, in his admirable work, "*Traité de la lumière*," published in 1690, fourteen years before the Optics of Newton—and from that epoch, or from 1678, when that treatise was communicated to the French Academy, must date the *discovery* of the polarization of light *as a fact*. Huyghens, moreover, *correctly* attributed it to a peculiarity impressed on the vibrations of the ethereal medium. But the picturesque phrase of Newton embodies the idea in a form easily apprehended, while it seems to have floated rather vaguely before the mind of his great predecessor, not so much as a general attribute, but as a specialty limited to the case in question.