matters, that at the present moment he knows as little as to the true nature of these agencies or substances as he did fifty years ago.[1]

Viewed from the position which we occupy in this history of thought—*i.e.*, in relation to the development of ideas—the conception of an ether has, however, like the atomic theory, had the most marked influence on scientific research and reasoning. In digging for a hidden treasure, in trying to describe the atoms or the ether, many practically useful conceptions, applicable to tangible phenomena, have been discovered. The atomic theory led at once to an enormous increase of our knowledge of different forms of matter, the knowledge of the elements, and of their innumerable possible compounds. The conception of the ether has led similarly to an enormous extension of knowledge of the different possible forms of motion. It is in this sense that we are greatly indebted to these abstract conceptions: both have guided our ideas in trying to understand and grasp the endless variety of phenomena. Let us see how from the early years of the undulatory theory of light our knowledge regarding the different forms of motion has grown, how that theory has contributed to the kinetic view of nature.

[1] Lord Kelvin, in referring to fifty years of scientific labour, said (see the publication by James Maclehose & Sons of the proceedings at his jubilee in 1896, p. 70): "I know no more of electric and magnetic force, or of the relation between ether, electricity, and ponderable matter, or of chemical affinity, than I knew and tried to teach to my students of natural philosophy fifty years ago in my first session as professor. Something of sadness must come of failure; but . . . what splendid compensation for philosophical failures we have had in the admirable discoveries by observation and experiment on the properties of matter, and in the exquisitely beneficent applications of science to the use of mankind with which these fifty years have so abounded."