

*knowledge.* I take pleasure in persuading myself that scientific subjects may be treated of in language at once dignified, grave, and animated, and that those who are restricted within the circumscribed limits of ordinary life, and have long remained strangers to an intimate communion with nature, may thus have opened to them one of the richest sources of enjoyment, by which the mind is invigorated by the acquisition of new ideas. Communion with nature awakens within us perceptive faculties that had long lain dormant; and we thus comprehend at a single glance the influence exercised by physical discoveries on the enlargement of the sphere of intellect, and perceive how a judicious application of mechanics, chemistry, and other sciences may be made conducive to national prosperity.

A more accurate knowledge of the connection of physical phenomena will also tend to remove the prevalent error that all branches of natural science are not equally important in relation to general cultivation and industrial progress. An arbitrary distinction is frequently made between the various degrees of importance appertaining to mathematical sciences, to the study of organized beings, the knowledge of electromagnetism, and investigations of the general properties of matter in its different conditions of molecular aggregation; and it is not uncommon presumptuously to affix a supposed stigma upon researches of this nature, by terming them "purely theoretical," forgetting, although the fact has been long attested, that in the observation of a phenomenon, which at first sight appears to be wholly isolated, may be concealed the germ of a great discovery. When Aloysio Galvani first stimulated the nervous fiber by the accidental contact of two heterogeneous metals, his cotemporaries could never have anticipated that the action of the voltaic pile would discover to us, in the alkalies, metals of a silvery luster, so light as to swim on water, and eminently inflammable; or that it would become a powerful instrument of chemical analysis, and at the same time a thermoscope and a magnet. When Huygens first observed, in 1678, the phenomenon of the polarization of light, exhibited in the difference between the two rays into which a pencil of light divides itself in passing through a doubly refracting crystal, it could not have been foreseen that, a century and a half later, the great philosopher Arago would, by his discovery of *chromatic polarization*, be led to discern, by means of a small fragment of Iceland spar, whether solar light emanates from a solid body or a gaseous covering, or