

is at this instant, but where it was four hours previously. A cannon ball, when first shot from the cannon, moves with a velocity of between 2000 and 3000 feet per second; supposing, therefore, it could retain its initial velocity, it would scarcely move in a year, as much as light moves in a single second! The utmost velocities of the earth and other planets, in their orbits, or on their axes, scarcely exceed 30 or 40 miles in a second. Hence the utmost velocity that we are acquainted with as possessed by ordinary matter, and therefore, the utmost perhaps, of which such matter is capable, only amounts to the 1-5000th or 1-6000th of that of light! These striking facts are mentioned with the view of conveying some notion of the immensity of space; and of the wonderful velocity with which it is, in every direction, penetrated by light. They seem also to show, that if light be material, the matter of which it is composed must exist in a state of tenuity, totally different from the ponderable matter we are acquainted with, which actually seems incapable of such velocity.*

If we consider heat and light to consist of polarized molecules in the self-repulsive state, and to obey the same laws that ponderable matters in the gaseous state obey, which is exceedingly probable; the radiation of these im-

* Pouillet, *Elémens de Physique et de Météorologie*, tom. III. p. 216.