

the scientific exploration of the outer world has above all forced upon natural philosophers.

In the course of the last hundred years a term has been introduced into the physical description of external phenomena, which has allowed many, if not all of them, to be reduced to a common denominator. This is the term Energy. It has taken the place, in text-books, of the ambiguous term Force, which was used in at least two different meanings, sometimes denoting merely the unknown cause of movement, and again identified with power to do work.

The quantity called Energy is supposed to consist of two factors, defined as the Intensity Factor and the Capacity Factor; and the difference of phenomena depends not only on the amount of energy, but also on the relative proportion of the two factors. The clear definition in mathematical language of these quantities and their combination marks out a large field for calculation, wherein the statement of the changes in the quantity and the composition of energy leads to remarkable results, to a control of the various forms in which energy presents itself, and the transformation of one form into another.

Long before the introduction and definition of this new term had placed the exact sciences on a sure footing, it had been noted that the two fundamental quantities, namely, Mass and Motion, were indestructible.

Notably the development of the science of Chemistry has depended upon the axiom that Mass is an indestructible quantity; and this principle became of eminent practical use when Mass was identified with