

principles had fixed, and were thus forced to introduce new conceptions. These new conceptions have not only opened out in their application vast regions of natural and historical knowledge, but have also tended to change our ideas regarding its nature, leading up to a new theory of knowledge and novel solutions of the everlasting problem. It may be useful to consider somewhat more in detail some of the more important steps by which this change has been brought about.

Foremost in this respect stand the modern definitions of two terms with which older science operated, frequently unconscious of the ambiguity inherent in them. These two terms are, matter and force. They have been supplanted in the exact or mathematical sciences by two other terms, viz., mass and energy,<sup>1</sup> which are capable of strict definition as measurable quantities in time and space. Upon them is built up the purely mechanical explanation of things and phenomena. It is true that in those natural sciences which deal with the individual things of nature we cannot yet discard the older terms, matter and force. But this—according to an opinion which can neither be proved nor disproved—only shows that where they have to be employed, as when we, for instance, deal with chemical

55.  
Greater  
precision.

<sup>1</sup> Some thinkers would prefer to say Mass and Motion, and to define energy in terms of Mass (or Inertia) and Velocity (or rate of motion). If this is done, it is evident that phenomena in which mechanical motion does not primarily present itself must be translated into these mechanical terms before they can be treated with exactitude. On the other side, the leaders of the

energetic philosophy abroad, with Prof. Ostwald at their head, conceive of energy as a fundamental quantity possessing two distinct factors, that of quantity (capacity) and that of intensity. With them mechanical energy is only one form of energy, and the term is conceived also to embrace non-mechanical (psychical) forms of energy.