

substances and affinities or with the instincts and impulses visible in organic nature, there remain dark points into which the daylight of exact science has not yet penetrated,—relations which are not yet accessible to strict definition in terms of measurable quantities.

56.
Conception
of energy.

In the seventh chapter of the first portion of this History I have shown how the conception of energy has been gradually evolved out of vaguer conceptions, and how the two principles of the conservation and the dissipation (degradation or disgregation) of energy have been established which respectively maintain that the amount of energy in the physical world remains constant, and that this amount tends to change from a more to a less available or useful condition. It was shown how the experimental proofs of the conservation of energy were furnished mainly in England, the theoretical in Germany; how the idea of dissipation originated in France; and how the whole doctrine of energy, so far as mechanical processes are concerned, was brought into clear relief and mathematically formulated mainly by the experimental and theoretical labours of Lord Kelvin. At the same time I showed how a school of natural philosophers has arisen in Germany who see in the theory of energy, or energetics, the fundamental doctrine which is to explain all physical phenomena. Unfortunately, so far as philosophical writers are concerned, almost the whole literature down to quite recent times is permeated and vitiated by a want of clear distinction between the mechanical definition of the older term force, which is now superseded by the less ambiguous term energy, and the still prevailing