

CHAPTER XII

THE LAW OF SUBSTANCE

The Fundamental Chemical Law of the Constancy of Matter—
The Fundamental Physical Law of the Conservation of Energy—
Combination of Both Laws in the Law of Substance—
The Kinetic, Pyknotic, and Dualistic Ideas of Substance—
Monism of Matter—Ponderable Matter—Atoms and Elements
—Affinity of the Elements—The Soul of the Atom (Feeling
and Inclination)—Existence and Character of Ether—Ether
and Ponderable Matter—Force and Energy—Potential and
Actual Force—Unity of Natural Forces—Supremacy of the
Law of Substance

THE supreme and all-pervading law of nature, the true and only cosmological law, is, in my opinion, *the law of substance*; its discovery and establishment is the greatest intellectual triumph of the nineteenth century, in the sense that all other known laws of nature are subordinate to it. Under the name of "law of substance" we embrace two supreme laws of different origin and age—the older is the chemical law of the "conservation of matter," and the younger is the physical law of the "conservation of energy."* It will be self-evident to many readers, and it is acknowledged by most of the scientific men of the day, that these two great laws are essentially inseparable. This fundamental thesis, however, is still much contested

* Cf. *Monism*, by Ernst Haeckel.