

until they are discovered, the law of conservation of energy as now stated may in some cases be strictly untrue ; just as it would be untrue, though partially and usefully true, in the theory of machines, if heat were unknown or ignored. To jump, therefore, from a generalisation such as this, and to say, as Professor Haeckel does on page 5, that the following cosmological theorems have already been “amply demonstrated,” is to leap across a considerable chasm :—

“1. The universe, or the cosmos, is eternal, infinite, and illimitable.

“2. Its substance, with its two attributes (matter and energy), fills infinite space, and is in eternal motion.

“3. This motion runs on through infinite time as an unbroken development, with a periodic change from life to death, from evolution to devolution.

“4. The innumerable bodies which are scattered about the space-filling ether all obey the same ‘law of substance’ ; while the rotating masses slowly move towards their destruction and dissolution in one part of space, others are springing into new life and development in other quarters of the universe.’