

## THE LAW OF SUBSTANCE

ence, especially in the way of optical and electrical experiments, yet we are still far from being clear and confident as to its real character. The views of the most eminent physicists, who have made a special study of it, are extremely divergent; they frequently contradict each other on the most important points. One is, therefore, free to choose among the contradictory hypotheses according to one's knowledge and judgment. I will put in the following eight theses the view which has approved itself to me after mature reflection on the subject, though I am no expert in this department :

I. Ether fills the whole of space, in so far as it is not occupied by ponderable matter, as a *continuous substance* ; it fully occupies the space between the atoms of ponderable matter.

II. Ether has probably no chemical quality, and is not composed of atoms. If it be supposed that it consists of minute homogeneous atoms (for instance, indivisible etheric particles of a uniform size), it must be further supposed that there is something else between these atoms, either "empty space" or a third, completely unknown medium, a purely hypothetical "interether"; the question as to the nature of this brings us back to the original difficulty, and so on *in infinitum*.

III. As the idea of an empty space and an action at a distance is scarcely possible in the present condition of our knowledge (at least it does not help to a clear monistic view), I postulate for ether a special structure which is not atomistic, like that of ponderable matter, and which may provisionally be called (without further determination) *etheric* or *dynamic* structure.

IV. The consistency of ether is also peculiar, on