

THE RIDDLE OF THE UNIVERSE

much determined by a movement of substance as is the hypothetical "vibration"; only the kind of movement and the relation of the moving elements are very different in the two hypotheses. Moreover, it is not the whole theory of vibration, but only an important section of it, that is contradicted by the theory of condensation.

Modern physics, for the most part, still firmly adheres to the older theory of vibration, to the idea of an *actio in distans* and the eternal vibration of dead atoms in empty space; it rejects the pyknotic theory. Although Vogt's theory may be still far from perfect, and his original speculations may be marred by many errors, yet I think he has rendered a very good service in eliminating the untenable principles of the kinetic theory of substance. As to my own opinion—and that of many other scientists—I must lay down the following theses, which are involved in Vogt's pyknotic theory, as indispensable for a truly monistic view of substance, and one that covers the whole field of organic and inorganic nature:

I. The two fundamental forms of substance, ponderable matter and ether, are not dead and only moved by extrinsic force, but they are endowed with sensation and will (though, naturally, of the lowest grade); they experience an inclination for condensation, a dislike of strain; they strive after the one and struggle against the other.

II. There is no such thing as empty space; that part of space which is not occupied with ponderable atoms is filled with ether.

III. There is no such thing as an action at a distance through perfectly empty space; all action of bodies upon each other is either determined by immediate contact or is effected by the mediation of ether.