

## THE RIDDLE OF THE UNIVERSE

*thought*). All the changes which have since come over the idea of substance are reduced, on a logical analysis, to this supreme thought of Spinoza's; with Goethe I take it to be the loftiest, profoundest, and truest thought of all ages. Every single object in the world which comes within the sphere of our cognizance, all individual forms of existence, are but special transitory forms—*accidents* or *modes*—of substance. These modes are material things when we regard them under the attribute of *extension* (or "occupation of space"), but forces or ideas when we consider them under the attribute of *thought* (or "energy"). To this profound thought of Spinoza our purified monism returns after a lapse of two hundred years; for us, too, matter (space-filling substance) and energy (moving force) are but two inseparable attributes of the one underlying substance.

Among the various modifications which the fundamental idea of substance has undergone in modern physics, in association with the prevalent atomism, we shall select only two of the most divergent theories for a brief discussion, the kinetic and the pyknotic. Both theories agree that we have succeeded in reducing all the different forces of nature to one common original force; gravity and chemical action, electricity and magnetism, light and heat, etc., are only different manifestations, forms, or *dynamodes*, of a single primitive force (*prodynamis*). This fundamental force is generally conceived as a vibratory motion of the smallest particles of matter—a vibration of atoms. The atoms themselves, according to the usual "kinetic theory of substance," are dead, separate particles of matter, which dance to and fro in empty space and act at a distance. The real founder and most distinguished representative