vation of the sum-total of the energy. This energy could exist as motion (actual or kinetic energy), being either motion of electricity as in the current controlled by the law of Ohm, or motion of ponderable masses, such as magnets or electric conductors; or it might be dissipated energy—*i.e.*, energy apparently lost in the form of heat—controlled by the law of Joule, or, to complete the summation, it might be stored-up energy—potential energy. Faraday's researches had suggested where this store was: it was in the surrounding space, which must be considered as capable of being strained or put into a condition of stress, as elastic bodies are capable of being strained. Thomson and Tait had shortly before shown how to submit the properties of elastic systems to calculation in the most general manner, by studying the modes in which energy, actual and potential, was distributed in them, whether at rest or in motion. The way seemed then paved for Maxwell to consider with the greatest generality the properties of the electro-magnetic field, reducing them all to mechanical measures. This he did by introducing the generalised conception of a displacement or strain which exists in the field, and which is communicated as a periodic or vibratory motion with a velocity dependent on the properties or so-called constants of the medium. It is known how he succeeded in identifying very completely all the various experimentally ascertained electric and magnetic phenomena, fixing their nature and quantities in conformity with experience, and arriving finally at the suggestion that the velocity of the transmission of the electro-magnetic displacement in air must be the same as that of light, the latter being,