http://geology.19thcenturyscience.org/books/1906-Merz-HistEurThot/README.htm

netic, and galvanic phenomena, such as Coulomb's electrostatic and magnetic laws, Ampère's electro-dynamic and electro-magnetic formulæ, and Ohm's and Faraday's laws referring to galvanic currents, and many others. It had also to give an intelligible representation of the elementary actions of which these complicated phenomena are made up. In order to arrive at the latter, the method usually employed is to look for analogies in other provinces of science where the desired unification has already been brought about. The great natural philosophers of the French school who had so successfully accomplished the most extensive unification yet attempted in any large branch of knowledge—the unification of physical astronomy under Newton's gravitation formula—had tried to follow up this analogy in other realms of research, and had developed what I called in a former chapter the astronomical view of natural phenomena. Ampère, and notably Weber, had extended this analogy so as to embrace electric and magnetic phenomena. There was, however, another analogy which was more familiar to the great experimentalists in this country, notably to Faraday—namely, the analogy of those various phenomena which depend on processes of emanation, of a gradual spreading out, of a flow or conduction: those phenomena where the factor of time comes in, and where an apparently stationary condition is brought about by a mode of motion, or what has been termed a "dynamic equilibrium." Thomson, starting from Fourier's mathematical analysis of such processes, had been led to see how far-reaching this analogy is, and had latterly (1852) extended it to