years old, but already acquainted with English experimental and French mathematical researches, he pointed out how phenomena of flow—*i.e.*, of motion—could be mathematically grasped by a formula quite similar to that of the distribution of masses at rest and apparently governed by attractive forces at a distance. For instance, the distribution of temperature at various distinct points in a space in which a flow of heat from an origin had brought about a stationary condition (the equilibrium being dynamical, not statical), was mathematically expressed by a formula identical with that which, according to Poisson and others, gave the distribution of electrical or attracting masses. Now we know that in the former case the equilibrium is maintained by a flow across the intervening space, which takes time. This suggests, therefore, the possibility of explaining the so-called statical effects of attracting or repelling masses kinetically by a process of flow or motion going on in the intervening medium, a notion to which Faraday clung tenaciously. In 1845 Thomson reverted to this subject, and after harmonising the two views, concluded by stating that the latter "method of establishing the mathematical theory would be even more simple if possible than that of Coulomb."[1]

[1] "On the Mathematical Theory of Electricity in Equilibrium," 1845. See 'Reprint of Papers on Electrostatics and Magnetism,' 2nd ed., p. 29. A study of these mathematical researches of Lord Kelvin, beginning early in the 'forties and extending over more than twenty years, is of special historical interest, as showing the gradual growth of a physical out of a purely mathematical theory: most of the conceptions which have since become general through Maxwell's electro-magnetic theory, as it has been developed and popularised by subsequent writers (notably Prof. Poynting, Prof. Oliver Lodge, and Mr Oliver Heaviside), being already contained in Thomson's papers as mathematical notions. Thomson is throughout careful to