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

the supposed static properties of matter could be explained by different modes of motion, translational, periodic, or rotational. The mathematical and experimental investigations connected with the theory of radiations and vibrations had thus an influence[1] on our general views of the nature of physical processes which far exceeded the aims for which they were originally undertaken. That a substance so attenuated as the ether should have the properties of a solid; that brittle substances like pitch should flow like liquids, if only sufficient time were given; that towards very rapid impulses gases and liquids might behave as solids—all these observations resulted in a complete revolution of our scientific notions as well as of our vocabulary. The great turning-point, indeed, lay in the kinetic theory of gases, which about the middle of the century had introduced quite novel considerations by showing how the dead pressure of gases and vapours could be explained on the hypothesis of a very rapid but disorderly translational movement of the smallest particles in every possible direction. Pressure of gases having been explained by a very rapid motion of the minute particles of matter, heat was immediately conceived to be merely a "mode of motion." As no event did more to spread modern views in the theory of light, and to popularise modern scientific methods, than Kirchhoff's

[1] It has been asserted that the theory of elasticity received a great impulse when Fresnel was forced to make assumptions as to the mode of vibrations of the ether which were quite incompatible with the then accepted laws of the vibrations of an elastic medium. To this view of the origin of the modern theory of elasticity Prof. Karl Pearson takes exception, as Navier's memoir of 1827 was not suggested by optical investigations (Todhunter-Pearson, vol. ii. 2, p. 5).