

be done. His object was to determine the velocity of the electric shock. His apparatus consisted in a small mirror, turning with great velocity about an axis which is in its own plane, like a coin spinning on its edge. The velocity of spinning may be made so great, that an object reflected shall change its place perceptibly after an almost inconceivably small fraction of a second. The application of this contrivance to measure the velocity of light, was, at the suggestion of Arago, who had seen the times of the rival theories of light, undertaken by younger men at Paris, his eyesight not allowing him to prosecute such a task himself. It was necessary that the mirrors should turn more than 1000 times in a second, in order that the two images, produced, one by light coming through air, and the other by light coming through an equal length of water, should have places perceptibly different. The mechanical difficulties of the experiment consisted in keeping up this great velocity by the machinery without destroying the machinery, and in transmitting the light without too much enfeebling it. These difficulties were overcome in 1850, by M. Fizeau and M. Léon Foucault separately: and the result was, that the velocity of light was found to be less in water than in air. And thus the Newtonian explanation of refraction, the last remnant of the Emission Theory, was proved to be false.