Edward W. Morley Encyclopedia Article

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BOOKRAGS

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Edward W. Morley

1838-1923

American chemist who in 1887 performed, in collaboration with Albert Michelson, the crucial experiments showing the medium called ether does not exist. The ether was thought to be a massless substance that pervaded all of space, even a vacuum. The assumed presence of ether provided a way to rationalize how electrical and magnetic phenomena could act at a distance and to explain the propagation of light. Michelson proposed that, if there is an ether, it could be detected by using two beams of light; one would travel with the ether and the other across it. There should be a difference in time for these two beams. The lack of any difference made this one of the most famous negative results in history. The Michelson-Morley experiment played a role in Albert Einstein's development of his theory of special relativity in 1905.