

ELECTRICITY AND MATTER, PP. 1-160

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J. J. THOMSON

**ELECTRICITY AND
MATTER, PP. 1-160**

YALE UNIVERSITY
MRS. HEPHA ELY SILLIMAN MEMORIAL LECTURES

ELECTRICITY AND MATTER

H. J. Thomson

ELECTRICITY AND MATTER

BY

Joseph
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WITH DIAGRAMS

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THE SILLIMAN FOUNDATION.

In the year 1883 a legacy of eighty thousand dollars was left to the President and Fellows of Yale College in the city of New Haven, to be held in trust, as a gift from her children, in memory of their beloved and honored mother Mrs. Hepsa Ely Silliman.

On this foundation Yale College was requested and directed to establish an annual course of lectures designed to illustrate the presence and providence, the wisdom and goodness of God, as manifested in the natural and moral world. These were to be designated as the Mrs. Hepsa Ely Silliman Memorial Lectures. It was the belief of the testator that any orderly presentation of the facts of nature or history contributed to the end of this foundation more effectively than any attempt to emphasize the elements of doctrine or of creed; and he therefore provided that lectures on dogmatic or polemical theology should be excluded from the scope of this foundation, and that the subjects should be selected rather from the domains of natural science and history, giving special prominence to astronomy, chemistry, geology, and anatomy.

It was further directed that each annual course should be made the basis of a volume to form part of a series constituting a memorial to Mrs. Silliman. The memorial fund came into the possession of the Corporation of Yale University in the year 1902; and the present volume constitutes the first of the series of memorial lectures.

Q12-1-30 MCW

P R E F A C E

In these Lectures given at Yale University in May, 1903, I have attempted to discuss the bearing of the recent advances made in Electrical Science on our views of the Constitution of Matter and the Nature of Electricity; two questions which are probably so intimately connected, that the solution of the one would supply that of the other. A characteristic feature of recent Electrical Researches, such as the study and discovery of Cathode and Röntgen Rays and Radio-active Substances, has been the very especial degree in which they have involved the relation between Matter and Electricity.

In choosing a subject for the Silliman Lectures, it seemed to me that a consideration of the bearing of recent work on this relationship might be suitable, especially as such a discussion suggests multitudes of questions which would furnish admirable subjects for further investigation by some of my hearers.

Cambridge, Aug., 1903.

J. J. THOMSON.

