# ELECTRONS: OR, THE NATURE AND PROPERTIES OF NEGATIVE ELECTRICITY. [LONDON-1907]

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Electrons: Or, The Nature and Properties of Negative Electricity. [London-1907] by Sir Oliver Lodge

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## SIR OLIVER LODGE

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## **ELECTRONS**

OR

## THE NATURE AND PROPERTIES OF NEGATIVE ELECTRICITY

BY

## SIR OLIVER LODGE, F.R.S.

D.Sc. Loyd., How. D.Sc. Oxon. of Vict., LL.D.St. Andrews, Glasgow, and Aberdeen

VICE-PRINCIPAL OF THE INSTITUTION OF ELECTRICAL ENGINEERS
ADMITCH MEDILIST OF THE ROYAL SOCIETY
EX-PRESIDENT OF THE PHYSICAL SOCIETY OF LONDON

LATE PROFESSOR OF PHYSICS IN THE UNIVERSITY COLLEGE OF LIVERPOOL GONDALLY MEMBER OF THE AUGUSTAN PHILOSOPHICAL SOCIETY OF PHILADELPHIA, OF THE BATAVIAN SOCIETY OF ECTIONAM, AND OF THE ACADEMY OF SCHEMOES OF BOLCONA FRINCIPLE OF THE UNIVERSITY OF SHAMPOHAM



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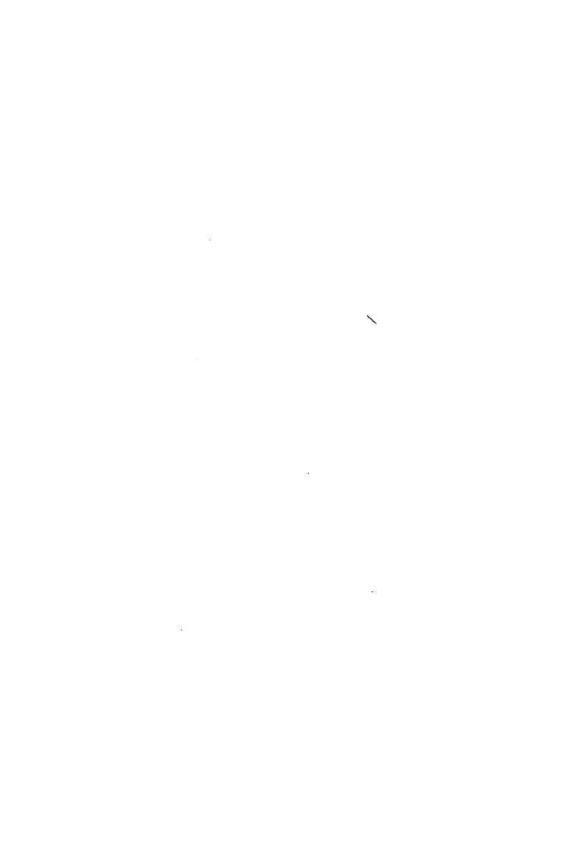
CAVENDISH PROFESSORS OF PRISICS

IN THE UNIVERSITY OF CAMBRIDGE, AND ESPECIALLY

TO THE PRESENT HOLDER OF THE CHAIR, THIS SMALL BOOK IS

DEDICATED WITH PROFOUND ADMIRATION

BY THE AUTHOR



## PREFACE

In 1902 I was asked by the President of the Institution of Electrical Engineers to give to that body a discourse on recent progress towards knowledge of the nature of Electricity, especially concerning its discontinuous or atomic structure. This discourse, greatly extended, appeared in Vol. 32 of the Journal of the Institution, and constitutes the nucleus of the present book.

Many additions have now been made, and some of the difficulties recently promulgated concerning the possibility of an electric theory of matter are touched upon. They are of date too recent to have been mentioned even in my "Romanes Lecture" before the University of Oxford, published under the title Modern Views of Matter by the Clarendon Press.

The most important addition is a more detailed account of the proof of the purely electrical nature of the mass or inertia of an electron: an investigation generally associated on the experimental side with the name of Kaufmann, but of course based on the work of many predecessors and contemporaries. A proof that the atom of matter is essentially composed of such electrons, and that its mass too is of purely electromagnetic nature, is lacking: the electromagnetic theory of Matter,