ELECTRICAL PAPERS

BY

OLIVER HEAVISIDE

IN TWO VOLUMES

VOL. I.

London
MACMILLAN AND CO.
AND NEW YORK
1892

PREFACE.

THIS Reprint of my Electrical Papers comes about by the union of a variety of reasons and circumstances.

First, there was a demand for certain of my papers, especially for a set relating to Electromagnetic Waves. Although I distributed 49 copies in a collected form, I was asked for more, and also received assurances that a republication of my papers in general would be useful. But this demand was too small to lead to an immediate supply.

Secondly, however, at the beginning of 1891 it was proposed to me by the publisher of *The Electrician* that my articles on "Electromagnetic Theory," then commencing and now continuing in that journal, should be brought out later in book form. This was satisfactory so far as it went, but it brought the question of a reprint of the earlier papers to a crisis. For, as the later work grows out of the earlier, it seemed an absurdity to leave the earlier work behind.

Thirdly, the experimental work of Hughes in 1886, furnishing the first evidence (in the sense ordinarily understood, though other evidence was convincing to a logical mind) of the truth of the theory of surface conduction along wires under certain circumstances, first advanced by me a year previously; followed in 1887-8 by the experimental work of Hertz and Lodge on electrical vibrations and electromagnetic waves, still further confirming the above, and also broadly confirming the truth of the theory of the propagation of disturbances along wires I had worked out on the basis of Maxwell's doctrine of the ether in its electromagnetic aspect, and the correctness of Fitzgerald's ideas concerning electrical radiation, and of the nature of the energy-flux developed by Poynting and myself from Maxwell's theory, were the means of stirring up an amount of interest in this theory that was quite wonderful to witness. That electrical disturbances were propagated in time through a medium was raised from a highly probable