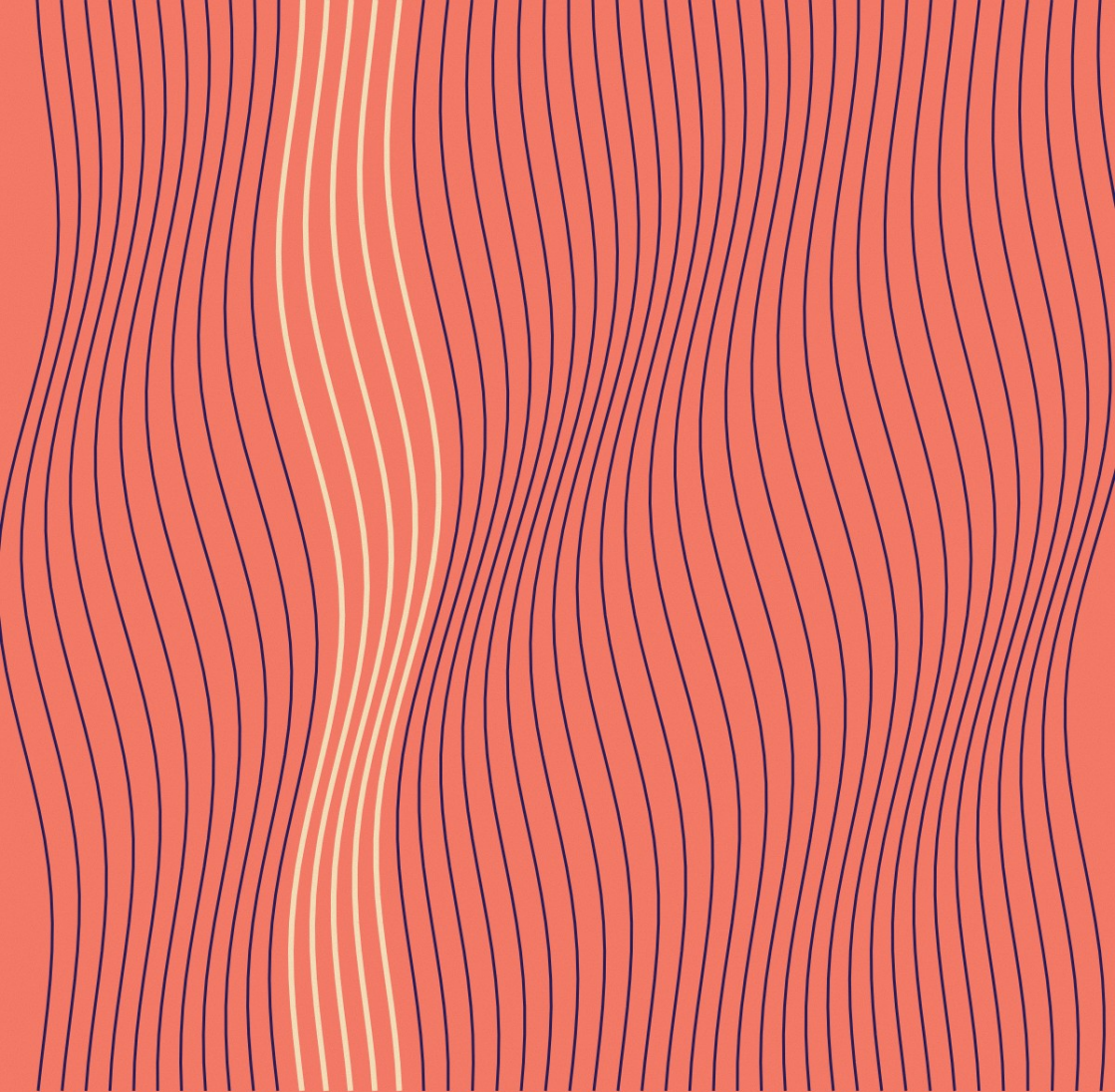




Waves and Ripples in Water, Air, and Aether

JOHN AMBROSE FLEMING

JVA EDITORA

JOHN AMBROSE FLEMING

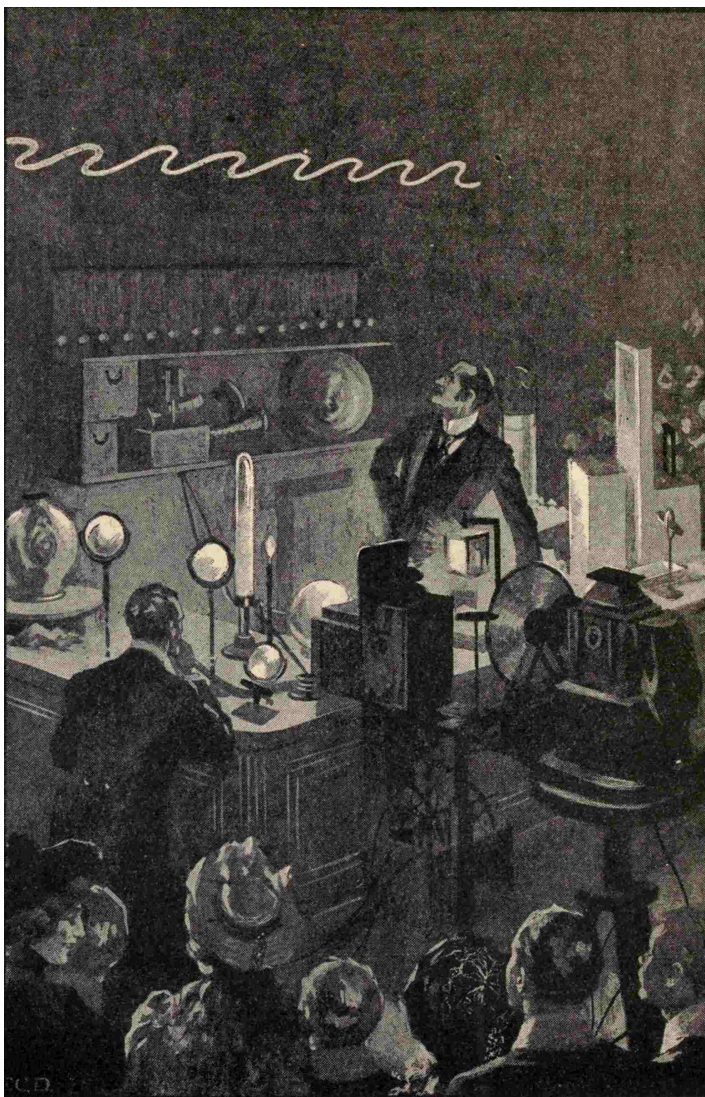
Waves and Ripples in Water, Air, and Aether

First published: 1902

Public domain edition

JVA Editora

WAVES AND RIPPLES



A CHRISTMAS LECTURE AT THE ROYAL INSTITUTION: "WAVES AND RIPPLES IN THE AIR."

Drawn by F. C. Dickinson.]

FIG. 46 (see p. 109).
"Graphic."

[From the

WAVES AND RIPPLES

IN

WATER, AIR, AND ÆTHER

BEING

A COURSE OF CHRISTMAS LECTURES DELIVERED
AT THE ROYAL INSTITUTION OF
GREAT BRITAIN

BY

J. A. FLEMING, M.A., D.Sc., F.R.S.

M. INST. E.E., M.R.I., ETC., ETC.

PROFESSOR OF ELECTRICAL ENGINEERING IN UNIVERSITY COLLEGE, LONDON

SECOND ISSUE, REVISED

LONDON

SOCIETY FOR PROMOTING CHRISTIAN KNOWLEDGE

NORTHUMBERLAND AVENUE, W.C.

43, QUEEN VICTORIA STREET, E.C.

BRIGHTON: 129, NORTH STREET

NEW YORK: E. S. GORHAM

[PUBLISHED UNDER THE DIRECTION OF THE GENERAL LITERATURE COMMITTEE]

PRINTED BY WILLIAM CLOWES AND SONS, LIMITED,
LONDON AND BECCLES.

PREFACE.

[vii]

THE Christmas Lectures at the Royal Institution are, by a time-honoured custom, invariably addressed to a “juvenile audience.” This term, however, has always been held to be an elastic one, and to include those who are young in spirit as well as those who are young in years. The conditions, therefore, necessarily impose on the Lecturer the duty of treating some subject in such a manner that, whilst not beyond the reach of youthful minds, it may yet possess some elements of interest for those of maturer years. A subject which admits of abundant experimental illustrations is accordingly, on these occasions, a popular one, particularly if it has a bearing upon topics then attracting public attention. The progress of practical invention or discovery often removes at one stroke some fact or principle out of the region of purely scientific investigation, and places it within the purview of the popular mind. A demand then arises for explanations which shall dovetail it on to the ordinary experiences of life. The practical use of æther waves in wireless telegraphy has thus made the subject of waves in general an interesting one. Hence, when permitted the privilege, for a second time, of addressing Christmas audiences in the Royal Institution, the author ventured to indulge the hope that an experimental treatment of the subject of Waves and Ripples in various media would not be wanting in interest. Although such lectures, when reproduced in print, are destitute of the attractions furnished by successful experiments, yet, in response to the wish of many correspondents, they have been committed to writing, in the hope that the explanations given may still be useful to a circle of

readers. The author trusts that the attempt to make the operations of visible waves a key to a comprehension of some of the effects produced by waves of an invisible kind may not be altogether without success, and that those who find some of the imperfect expositions in this little book in any degree helpful may thereby be impelled to study the facts more closely from that “open page of Nature” which lies ever unfolded for the instruction of those who have the patience and power to read it aright.

J. A. F.

UNIVERSITY COLLEGE,
LONDON, 1902.
