ELEMENTARY TREATISE ON NATURAL PHILOSOPHY. IN FOUR PARTS. PART III. ELECTRICITY AND MAGNETISM, PP. 505-783

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ELEMENTARY TREATISE

ON

NATURAL PHILOSOPHY.

BY

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IN FOUR PARTS.

PART III.

ELECTRICITY AND MAGNETISM.

ILLUSTRATED BY

241 ENGRAVINGS ON WOOD, AND ONE COLORED PLATE.

NEW YORK:
D. APPLETON AND COMPANY,
1, 3, AND 5 BOND STREET.
1881.

THE accurate method of treating electrical subjects which has been established in this country by Sir Wm. Thomson and his coadjutors, has not yet been adopted in France; and some of Faraday's electromagnetic work appears to be still very imperfectly appreciated by French writers. The Editor has accordingly found it necessary to recast a considerable portion of the present volume, besides introducing two new chapters (XXXIX^{A}. and XLI^{A}.) and an Appendix. Potential and lines of force are not so much as mentioned in the original.

The elements of the theory of magnetism have been based on Sir Wm. Thomson's papers in the *Philosophical Transactions;* and the description of the apparatus used in magnetic observatories has been drawn from the recently published work of the Astronomer Royal. The account of electrical units given in the Appendix is mainly founded on the Report of the Electrical Committee of the British Association for the year 1863.

M. Deschanel's descriptions of apparatus, of which some very elaborate examples occur in the present volume, left little to be desired in point of clearness. In no instance has it been found necessary to resort to the mere verbal rendering of unintelligible details.

ERRATUM.

In Fig. 356 the paper armatures are wrongly placed. Their broad parts should be exactly opposite the combs P P', and their points $f f'$ which project through the windows should be turned the opposite way to that represented in the figure, so that the revolving plate may pass them before it passes the combs.

CONTENTS—PART III.

ELECTRICITY.