

## PREFACE.

IN the first edition of this treatise the subject of Attractions was presented only in its gravitational aspect. This limitation was formerly customary, when electricity was less studied than now, but the result has become somewhat unsatisfactory. When lecturing on the subject the Author found that some of the most striking examples of Attraction were those derived from the theory of electricity. While it was impossible wholly to pass these over, it appeared that the interest in them was sensibly diminished if they were discussed without explanations of their meaning. Examples on the attractions of thin layers of matter, subject to what appeared to be arbitrary laws, seemed to have no real applications.

For these reasons a selection has been made of those propositions in Magnetism and Electricity which appeared most forcibly to illustrate the theory of Attraction. These have been joined together, with brief introductions, so as to form a continuous story which could be understood without reference to any other book.

These illustrations have been so far separated from the rest of the volume that any portion of them may be omitted by a reader who desires to confine his attention chiefly to gravitational problems.

Some theorems, which it was not deemed expedient to include in the text, have been shortly discussed in the notes at the end of the volume. These are not always closely connected with the theory of attractions, yet, being natural developments of the text, will probably assist the reader in following the argument.