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BY

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## PREFACE.

IN arranging for publication the present collection of my papers on Mathematical and Physical subjects, I have taken the dates of their first publication as a general rule in fixing the order of the various papers.

In certain cases, however, I have considered it advisable to bring together under one article all that I have written on one particular line of research; the most important instances of this being Articles XLVIII., XLIX., and L. Article XLVIII., "On the Dynamical Theory of Heat," and Article L., "On Thermodynamic Motivity," includes all of my papers on this subject, published between the years 1851 and the present time, except the Article "Heat" of the *Encyclopædia Britannica*, published in 1880. Article XLIX., "On the Thermal Effects of Fluids in Motion," consists of a joint series of papers by Dr Joule and myself published at various intervals between 1853 and 1862.