

**AN OUTLINE OF THE
THEORY OF
THERMODYNAMICS**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649665655

An Outline of the Theory of Thermodynamics by Edgar Buckingham

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EDGAR BUCKINGHAM

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*Physics
Thermodyn.*

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OF
THERMODYNAMICS

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New York
THE MACMILLAN COMPANY

LONDON: MACMILLAN AND CO., LIMITED

1900

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GLASGOW : PRINTED AT THE UNIVERSITY PRESS
BY ROBERT MACLEHOSE AND CO.

PREFACE

IN the course of studying thermodynamics I have found a considerable gap between the text-books available and the modern memoirs. This volume has been written to spare other students some of the time which I have had to spend in bridging over the gap for myself.

As the title indicates, it is not a book of applications, but a brief outline of the theory, the applications having been selected solely with a view to their illustrative value. Physical applications may be found in any large work on Physics, while in the field of Physical Chemistry M. Duhem's recent work on Chemical Mechanics * makes a new volume of applications superfluous for the present.

I am, of course, indebted to many authors. In cases where the methods used were not so well known as to be common property, I have intended to mention my sources; but I must particularly acknowledge my great indebtedness to Professor Gibbs * and M. Duhem,* whose influence will be very evident to readers familiar with their writings.

In concluding, it is a pleasure to express my thanks to Professor James Harkness of Bryn Mawr College, for aid and advice during the preparation of the manuscript, and to Professor W. S. Franklin of Lehigh University, T. W. Richard of Harvard University, and J. E. Trevor of Cornell University, for assistance in revising the proof, as well as for many valuable suggestions regarding the subject matter.

EDGAR BUCKINGHAM.

CAMBRIDGE, MASSACHUSETTS,
April 30th, 1900.

* See list of reference books in the Appendix.



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