

## PREFACE

The collection of these demonstration experiments has been from the first a cooperative undertaking. The idea originated nearly five years ago as a pipe dream during a meeting of the Committee on Cooperative Tests of the American Association of Physics Teachers, in a suggestion by Professor C. J. Lapp. In 1934 a small committee, consisting of Professors John Zeleny, C. T. Knipp, and H. W. Farwell, reported favorably upon the "desirability and feasibility" of preparing such a collection and the editor was appointed early in 1935. He was assisted in the formulation of a suitable policy by a committee whom he asked to advise him, namely, Professors D. W. Cornelius and H. W. Farwell and Dr. P. E. Klopsteg, and the first four presidents of the Association, Professors H. L. Dodge, F. Palmer, D. L. Webster, and F. K. Richtmyer. A group of collaborating editors, whose names appear facing the title page, have given tremendous assistance in the critical examination of experiments. These men drew upon their own experience, assisted in the search for suitable demonstrations, tested many of the experiments which were contributed, and have been a constant help to the editor in the preparation of the manuscript.

Throughout the program of preparation the editor has been sustained by the helpful suggestions and the interest shown by many members of the American Association of Physics Teachers. Contributed experiments began to arrive soon after the first appeal was made in May, 1935, and ever since that time the editorial office has been kept busy. More than 200 members of the Association have shared their experience with other teachers of physics in this way. A number of industrial organizations have responded as well. Each experiment was allotted to the appropriate collaborating editors for trial and criticism. These men returned their findings to the editorial office where they were finally organized.

It would be phenomenal if this book were to fulfill the expectations of all those who have shown so much interest in it. We

beg our readers to realize that one such volume cannot possibly be "all things to all men," and that the editors have had to reject many interesting but conflicting suggestions. Otherwise the book would have been a cross between a loose-leaf household formulary and the International Critical Tables. It has not been possible to include in a single volume all the contributions submitted, but these have been preserved against the time when the Association may promote an extension of the program.

Demonstration is an art and, like every art, it develops from year to year. It is probable that many good experiments have not been submitted at all, and we hope that this book itself will stimulate those teachers of physics who have not contributed in the past to share their experience with other teachers in the future, either by suggesting to the editor (who assumes only the function of custodian) good experiments which have been overlooked or improvements on those here described, or by publishing accounts of such experiments in a journal like *The American Physics Teacher*.

It is a pleasure to acknowledge the help of Professors R. B. Abbott, R. S. Minor, and W. Schriever, who served as collaborating editors in the early stages of our work; to thank each of the thirty or forty persons who assisted by reading and criticizing portions of the manuscript; and to thank Mr. R. C. Hitchcock, who checked all the page proof.

The editor wishes to give special acknowledgment to Mr. Joseph D. Elder, who has had intimate contact with the book almost from the first. His ability to combine the functions of physicist and of typist has made him invaluable and he has helped with the critical examination of every word of the text. The editor is indebted to his colleague and beloved teacher, Professor Frederic Palmer, for his constant encouragement. Only those who have followed the development of this undertaking know the extent to which the Association is indebted to Professor Palmer.

If this book proves to be useful to teachers of physics, if it helps to make the science more vivid to students and lead them to a better understanding of the world, then it will justify the labors of all those who have assisted in its preparation.

HAVERFORD COLLEGE,  
June, 1938.

RICHARD M. SUTTON.