## PREFACE

majority of the teachers of the country now appreciate the value of the problem method of teaching; we believe that they recognize that the old series of topics, which was selected to contain the "Physics every Physicist must know," must give way to a series of topics which contains the "Physics every child should know."

Recognizing that many of the topics which have been considered essential to a course in Physics are necessary and significant to those who are going into technical scientific work, but are neither necessary nor significant to others, we have divided the book into two parts. Part I contains the material that should be significant to everybody. There is enough material here for a full year's work. Those who have completed this part in one year will have satisfied the definition of the unit in Physics as adopted by the North Central Association of Colleges and Secondary Schools.

Part II contains material that may be needed by those who are going on to work in scientific professions, and considerable other material which many teachers desire to place before their pupils. This material is so arranged that it may be used either in connection with that material of Part I to which it is most closely related, or in a later course in which the first course is reviewed and amplified.

This division of the subject matter into two parts is a doubly advantageous one. First, it makes it possible to give all the pupils a significant and learnable course in Physics. Second, those who go on will be able to master the whole subject better if they take it in the order given, because the more abstract and difficult topics come near the end. In other words, the demands on the pupil's powers of abstraction and analysis increase as the argument proceeds. This arrangement, therefore, gives a better preparation for future work than the usual one, which begins with a mathematical treatment of accelerated motion. Those who master both parts will have more than satisfied the new definition of the requirement in Physics of the College Entrance Examination Board.