PREFACE

realistic; but they are, in the main, such as the pupil can perform, and should be encouraged to perform, by himself outside of the class hours.

Numerous practice exercises are given, from which selections may be made at the discretion of the teacher. It is generally conceded that nothing else so tends to clarify the pupil's ideas and to fix scientific principles in his mind as does the solving of problems and questions growing out of these principles. Furthermore, since acquaintance with the history of a science helps to make attractive and to humanize that which might otherwise seem 'dull and colorless, frequent allusions are made to the great discoveries and researches by means of which the edifice of physical science has been built up, and portraits of some of the most notable of its master-builders have been interspersed throughout the book.

Provision has been made for a year's work, on the supposition that about one third of the time will be devited to laboratory practice. For laboratory use the teacher will choose from the many excellent manuals now available the one best adapted to his ideas and convenience. Should it seem expedient to use a manual of the same authorship as this text, he will choose between the *Physical Manual and Note Book* and the *Physical Experiments*. The latter is especially adapted to meet the requirements for admission to Harvard University.

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