

or mechanical skill. Besides, it will generally be admitted that the construction of the simpler apparatus by the student himself is a most valuable and useful exercise, giving him a firm and lasting hold upon fundamental principles which he can attain in no other way. But this attention to detail does not stop with the instrument itself. All of various steps to be gone over in its use, its proper adjustments, the errors to be looked out for, etc., are carefully considered; and in nearly every instance a numerical example is provided, generally taken from real laboratory note-books, and the solution and reduction are gone through with.

In short, in this respect, as many others, the book comes as near taking the place of the living instructor as can well be imagined. It must not be understood that the book is for the beginner in the study of electricity. It must at least be taken in connection with, and better after, a course in some elementary text-book on the subject, and, in addition, may go along with a course of lectures upon fundamental theories. The recognition of this fact is shown in the plan of the book itself, in which, in the first three chapters, the student is introduced to the leading principles of the science, its nomenclature, units of measure, etc., that the less elementary chapters which follow may offer less difficulty.

The chapter on resistance measurement is naturally full and complete, nearly all important and useful methods being given. A full discussion of the tangent galvanometer is given, together with the methods of determining its constants. Related to this is the determination of the magnetic elements, and a good deal of space is devoted to a very complete description of the Kew magnetometer: its use is described, and a series of observations is completely worked out. Other parts of the work are equally worthy of commendation, especially the series of appendices at the end, containing among other things a number of valuable hints as to the manipulation of material used in the construction of apparatus.

Nearly all of the formulas used in the reduction of observations are derived from elementary propositions, but the mathematical treatment of the subject is elementary, and well suited to the character of the work. In addition to its adaptability to class-room work, the book can be highly recommended to private students of electricity and magnetism.

*Introduction to a Historical Geography of the British Colonies*  
By C. P. LUCAS. Oxford, Clarendon Pr. 12°.

THIS little book is the first instalment of a larger work, to be published in parts, and dealing separately with the various dependencies of the British Empire. It gives not only a brief history of the founding of the British colonies, but treats of colonization generally, ancient and modern, and gives some chapters to what may be called the philosophy of colonization. Mr. Lucas defines a colony as a body of persons who have left their native country and permanently settled in another, and who in their new home form the bulk of the inhabitants. He then proceeds to consider the motives of colonization, the chief of which he finds to be these four: "love of enterprise, desire of wealth, social or political discontent; and religion." He does not attribute so exclusive an influence to over-population in the mother-country as some writers do, but thinks that the other motives have in many cases been more important than this. He gives a brief but interesting account of the influence of religion in the founding of colonies and the conquest of dependencies, and also of the effects of climate and race. A colonizing race should be not only enterprising and inclined to emigrate, but also endowed with an aptitude for commerce, and especially for law and government. Of these characteristics the last named is the most important: "Colonizing on any large scale must imply dealing with subject races, and the past has shown, that, in spite of other defects, the people which can govern will in the end prevail" (p. 27).

The brief history of colonization, ancient and modern, which the book contains, and the special account of the English colonies with which it closes, contain a large amount of information in a small compass, and, though treating of matters that are familiar to most readers of history, will be useful for reference. If the projected historical geography of England's colonies is carried out as well as it is begun, it will prove a valuable addition to historical literature.

*Electricity for Public Schools and Colleges.* By W. LARDEN.  
London, Longmans, Green, & Co. 12°.

THE ceaseless activity in all matters pertaining to electricity is shown in the continued appearance of books relating to the subject, in all parts of the world and in all languages.

This book is intended, as its title implies, to serve as a text-book for high-class public schools, and for colleges in which a thorough training in the fundamental principles of electricity and magnetism is furnished, in the development of which the instructor is restricted to elementary mathematics.

Few institutions of learning in this country can offer to their students more than this, and, in fact, not very many have found it possible to make use of a separate treatise upon the subject, except, of course, in the way of special elective courses.

Of the several books containing an elementary treatment of electricity and magnetism which have appeared within the last ten or fifteen years, this by Larden has the advantage of being one of the most recent, and in breadth of treatment, and thoroughness of execution, one of the best.

Only elementary mathematics is made use of, and it is therefore necessary occasionally to state a proposition on authority. Frequent references are given, however, to treatises in which such propositions will be found fully discussed. In some instances where elementary demonstrations are presented, the author has not selected the easiest and most simple. An illustration of this statement is to be found in his proof of the condition under which a battery gives a maximum current. Some of his discussions are also open to the objection of an excessive conciseness and brevity of statement, thus presenting difficulties which the average student of the class for which the book is intended will have difficulty in overcoming. The diagrammatic illustrations have been drawn especially for the work, and are generally very clear. A number of cuts of complete and well-known forms of apparatus are also furnished.

Among the commendable features of the book may be mentioned a very full discussion of induction machines (electro-static), including the Voss machine, the Holtz machine, and others, the operation of which is often very perplexing to students.

The author is not fortunate in his chapter on atmospheric electricity, and especially where he attempts to account for the varying potential of the atmosphere.

The treatment of electric measurements is tolerably full, sufficiently so for a book of this kind, in which one ought not to expect to find all of the now nearly innumerable methods and devices. The chapter on Joule's law and the conservation of energy is especially complete, although not long; and other chapters, on electro-dynamic induction, the dynamo, induction coils, etc., will be found quite satisfactory. Many teachers and students of the science will welcome the book, and find it useful in their work.

*The Science of Politics.* By WALTER THOMAS MILLS. New York, Funk & Wagnalls. 12°.

IN taking up a book with the above title, we naturally expect to find it treating of the duties and functions of the State, or of its organization or its history; but these topics are scarcely touched upon in the work before us. The author himself states his subject to be the duties of citizenship and the means of performing them; but he confines himself mostly to the treatment of political parties. Mr. Mills, as he tells us on his titlepage, is a journalist; and the influence of his profession is a little too plainly visible in this work, the style showing some of that offhand infallibility which many journalists affect. As regards matter, the book is not specially profound or original, yet it nevertheless contains much that is good. The author has in the main very correct ideas as to the nature and functions of parties and the rights and duties of the citizen with regard to them. He sees clearly that a party without principles is worthless, and that the fact that a party has done well in the past is no guaranty that it will always do well in the future. He vigorously maintains the right to bolt a bad nomination, and the right and duty of leaving an old party and joining a new one in case the old one proves recreant to its trust. Such views as these are not yet so widely accepted in this country as they ought to be; and, if this book should be read by the right persons, it can hardly fail to