

Even here, the symbol becomes rather cumbersome, and this is the simplest case of a double relationship.

ARTHUR E. BOSTWICK

SCIENTIFIC BOOKS

Magnetism and Electricity. By BROOKS and POYSER. Longmans, Green and Co. Pp. vii + 633; 413 illustrations.

This volume is intended by the authors to replace Poyser's "Advanced Magnetism and Electricity" as the latter book had become out of date owing to the enormous progress made in electrical theory during the last twenty years. The subject-matter is presented in experimental form; practically every point treated theoretically is illustrated by one or more experiments. The method is admirable, especially for a text in physics; as the authors state in the preface, it is important that a beginner should learn to recognize that all theory is based upon a groundwork of experimental fact. The book treats all of the subjects usually found in a text on electricity and magnetism and the treatment is very well done in most cases. The authors' emphasis upon the student's comprehension of the significance of the lines of force of the electric and magnetic field we think well worth while; the more the student is made to understand Faraday's ideas in regard to the electric and magnetic fields the better prepared he will be to understand the operation of instruments and machines.

The modern conception of the electric current as the flow of electrons is used in the book and its use is undoubtedly justified at this time, by the results obtained from the experiments of various researchers along this line. A chapter is devoted to the discharge of electricity through gases; in the discussion use is made of the latest theories in regard to this phenomenon. The chapters on Dynamos and Motors and on Alternating Currents are entirely inadequate to be of much service to the student. We think they should have either been omitted altogether or else treated more comprehensively. Any adequate treatment of dynamos and motors requires a deal of space

and should not be attempted in such an elementary text.

A carefully selected list of problems is given at the end of each chapter and it adds much to the value of the book as a text. On the whole we think this text to be as well suited for teaching purposes as any that has recently come to our attention.

J. H. MORECROFT

COLUMBIA UNIVERSITY

The Life of the Plant. By C. A. TIMIRIAZEFF.

Translated from the revised and corrected seventh Russian edition by ANNA CHEREMETEFF. New York, Longmans, Green, and Co. 1912. Pp. 355 with 80 text-figures. \$2.50.

It is a great pity that this admirable popular presentation of the status of plant physiology might not have appeared in English some twenty-five years ago. Originally published in 1878 and passing through seven editions it can not but strike one familiar with the current literature as being distinctly behind the times, in spite of the evident effort to incorporate various modern investigations. For the specialist the translation has been too long delayed, and even for the general reader there are many views which should be modified in order to give as accurate as possible a notion of what the plant really does. On the other hand, it must be confessed that Professor Timiriazeff has presented the subject in such an attractive form that its very readableness is a strong point in favor of the book. Few of those who have any interest in botany whatever but that will enjoy reading "The Life of the Plant" and the great number of apt illustrations and demonstrations makes one wish that numerous American audiences might have had the opportunity of listening to such a course of lectures thirty-five years ago. The popular conception of a botanist would certainly be higher.

The book is neither a text-book nor a special treatise, but a simple account of the more fundamental life processes of the plant told in a way calculated to make them interesting if not "popular." For this reason it is