

The Heaviside Centenary Volume

Pp. v+98+6 plates. (London: Institution of Electrical Engineers, 1950.) 10s.; 4s. to members.

THIS well-produced and attractive volume is a record of the special meeting of the Institution of Electrical Engineers, held on May 18, 1950, to commemorate the centenary of the birth of Oliver Heaviside (see *Nature*, 165, 991; 1950). It contains the texts of the tributes paid to his memory by Prof. E. B. Moullin, president of the Institution, Sir Robert Robinson, president of the Royal Society, Sir Edward Appleton, Dr. M. J. H. Ponte, representing the Société Française des Électriciens and also the Société des Radioélectriciens, Sir Archibald Gill, Dr. O. E. Buckley, president of the Bell Telephone Laboratories, Prof. Harold Jeffreys, Sir Edmund Whittaker and Dr. G. F. C. Searle.

In addition, there are the following papers: "Oliver Heaviside—The Man", by Sir George Lee; "Some Unpublished Notes of Oliver Heaviside", by H. J. Josephs; "An Appreciation of Heaviside's Contribution to Electromagnetic Theory", by Prof. Willis Jackson; "Heaviside's Operational Calculus", by Prof. Balth van der Pol; "Fifty Years' Development in Telephone and Telegraph Transmission in relation to the Work of Heaviside", by Dr. W. G. Radley; "Heaviside's Pure Mathematics", by Prof. Harold Jeffreys; and "Oliver Heaviside—A Personal Sketch", by Dr. G. F. C. Searle. These papers bring to light many facts about Heaviside's character and his work which had been obscured by the seclusion in which he lived and by the mode of presentation and inherent difficulty of many of his published papers. The most important section of the book is the impressive reconstruction by Mr. Josephs of portions of Heaviside's unpublished work under the following five headings: infinite integrals, 'physical' mathematics, electric circuit theory, electromagnetic theory and unified field theory. It is to be hoped that the contents of other portions of the manuscripts now in the possession of the Institution will also be published in due course.

The Institution of Electrical Engineers is to be congratulated on the preparation of a magnificent tribute to one of the most famous of its honorary members and to the man whom it selected to be the first recipient of the Faraday Medal.

The World of Science

By Dr. F. Sherwood Taylor. Second edition. Pp. xviii+1064+48 plates. (London: William Heinemann, Ltd., 1950.) 21s. net.

THIS encyclopædic volume can be confidently recommended to the man of science and layman alike, both for general reading and as a reference book. I have found the first edition, published in 1936, to be a most valuable source book and its index a reliable guide. This second edition should prove equally valuable and interesting reading, for it is, in fact, largely a reprint of the first (bearing the same page numbers), but with a number of pages inserted at various points to carry the new material. Most of the remarkable advances that have been made since the first edition are covered; they include atomic energy, radar, gas turbines, new elements, recent astronomical theories, new drugs, and modern theories of the origin of man.

The printing, especially the line blocks, is not as sharp as it might be, doubtless owing to the method of reproduction from the first edition which has been employed. On the other hand, this slight short-

coming is offset by the remarkably low price of 21s. for these days (which might be compared with the 8s. 6d. for the first edition which had almost the same number of pages).

The last chapter "Looking Ahead" differs only by the addition of a sentence or two from that written fourteen years ago; surely the author's publishers will encourage him before an equally long period passes to produce a third edition which will not have to be so closely tied to the original text. H. R. LANG

Mechanics

A Text-Book for Engineers. By James E. Boyd and Prof. Percy W. Ott. Third edition. Pp. xii+422. (London: McGraw-Hill Publishing Co., Ltd., 1950.) 38s. 6d.

IT is always a pleasure in welcoming a book which bears the stamp of thoroughness, and this book is an example of a carefully thought-out plan to put clearly before students the fundamentals of the subject. The execution of this plan has resulted in a really sound book, now in an enlarged third edition, which cannot fail to assist the student. The aim is to emphasize with illustrative examples the fundamental principles, and to encourage the student to use logical thinking and suitable mathematical methods in solving problems based on the principles. Greater stress is placed on the application of the principles to problems, especially numerical ones, rather than on the mathematical derivation of the principles or the relationships which they bear to one another.

The authors have evidently spared no time or trouble in an endeavour to make things clear, and they have eminently succeeded. The short space devoted to the principle of virtual work gives the clearest exposition of this very useful method seen by the reviewer in a book of this standard. The same thoroughness which pervades the text is repeated in the diagrams, which are excellently done.

Progress in Biophysics and Biophysical Chemistry

Editors: Dr. J. A. V. Butler and Prof. J. T. Randall. (Progress Series.) Pp. viii+279. (London: Butterworth-Springer, Ltd.; New York: Academic Press, Inc., 1950.) 50s.

THIS book is the first of a new series which will present at intervals review articles of selected topics in biophysical research. Biophysics is a borderline subject which is difficult to define precisely. Interest in recent years has perhaps centred more on the structure of cells and tissues than on the physics of the mode of operation of organs. However, the nine contributions to this first volume have been well chosen and cover a wide field.

The reviews are in general well documented and provide a useful starting-point for further reading. They are written in a critical vein and give expression to the opinions of the various authors. They combine, therefore, the personal interest of an essay with the substance of a progress report. The aspects covered include the properties of solutions of large molecules, fundamental molecular structures in biological systems, X-ray and light scattering by protein solutions, bioelectric potentials, phase-contrast microscopy, the theory of local refractometry, the assay of biological materials by soft X-ray absorption, the tolerance of man for radioactive isotopes and the mechanical properties of muscles and fibres.

The production of the book is of a high standard.

D. P. RILEY