

description of the latest type of electric-hydraulic forging press is another of the added features which maintain the repute of the book as one of the foremost treatises on the subject of hydraulics.

#### Essentials of Alternating Currents

By Prof. William H. Timbie and Prof. Henry H. Higbie. Second edition. Pp. x+378. (London: Chapman and Hall, Ltd.; New York: John Wiley and Sons, Inc., 1939.) 11s. net.

**D**URING the last ten years there has been a wide expansion in the applications of alternating current power both for domestic use and in industry. The wide use of static condensers for improving the power factor, and the introduction of more efficient rectifying devices, have made a knowledge of the operating principles of these devices essential to the practical electrician, who is keenly alive to keeping abreast of the latest improvements. The second edition has been prepared with this end in view. Many practical men have forgotten much of the mathematics they studied at school, so the authors devote themselves to simplifying the mathematical wording as much as possible and giving graphical methods which, with the help of simple numerical tables, enable them to solve most of the practical problems they come across with the minimum of labour. The chapters on motors, starters and controllers, and on converters and rectifiers will be found useful to many.

### Mathematics

#### A New Geometry for Schools

By Clement V. Durell. Pp. xvi+572+xxii. (London: G. Bell and Sons, Ltd., 1939.) 5s. 6d.

**M**R. DURELL'S "Elementary Geometry" appeared fourteen years ago, and the author has now decided to replace it by an entirely new book, recasting his treatment in the light of his own experience, the suggestions sent to him by others, and the recent Second Report of the Mathematical Association on the Teaching of Geometry. He gives a course from the first stage up to the standard of the School Certificate, developing each group of geometrical facts by the following successive stages: examples for oral discussion, numerical examples, formal proofs of theorems, and a carefully graded and classified set of riders.

#### Computation and Trigonometry

By Harold J. Gay. Pp. vii+143. (New York: The Macmillan Company, 1938.) 10s. net.

**T**HE fifteen chapters of this book cover a wide field. The first three are concerned mainly with computation and contain much useful information on arithmetical accuracy, logarithms and the slide rule. Chapters iv-xii deal with plane trigonometry up to the solution of triangles, whilst the remaining three chapters are devoted to the elements of spherical trigonometry with some interesting applications. All the fundamental formulæ are summarized at the end and occupy no less than five pages. Throughout the

text, the student is well supplied with exercises, but no answers to these appear to be provided.

In comparison with the course covered the book is somewhat large, but this is due to the fact that bound up with the text is a revised edition, running into over 142 pages, of logarithmic and trigonometric tables, prepared under the editorship of Prof. Hedrick. Most of these tables are given to five places and include compound interest, compound discount, annuity and American Experience Mortality tables.

#### Some Notes on Least Squares

By Dr. W. Edwards Deming. Pp. iv+181. (Washington, D.C.: Graduate School, Department of Agriculture, 1938.) 1.50 dollars.

**T**HE method of least squares, developed largely by Gauss, and applied widely by astronomers and physicists in the last century, has taken on a new lease of life with its application to statistical problems. Students approaching the method from the statistical point of view are perhaps not as familiar as could be desired with the work of the older writers, and Dr. Deming is to be congratulated on presenting the subject in a way which stresses the continuity of its development. These notes are a mimeographed transcription based on lectures given by Dr. Deming in the Washington School of Agriculture. As the author points out in the preface, they were not assembled with the idea of forming a complete text on the subject, but they do perform a useful function in directing the student who wishes to go into the theory of least squares somewhat closely. Many numerical examples are worked.

#### Calculus

By Prof. Frederic H. Miller. Pp. xiv+420. (London: Chapman and Hall, Ltd.; New York: John Wiley and Sons, Inc., 1939.) 15s. net.

**T**HIS is an account of the differential and integral calculus, with a chapter on infinite series and another chapter on differential equations. It is intended for American students of science or engineering, and also for those interested in mathematics for its own sake. It covers all the usual elements of the subject, going as far as partial differentiation and multiple integrals. There are many geometrical and physical applications, and more than 2,300 examples. The appendixes contain formulæ from other branches of elementary mathematics and useful tables.

### Miscellany

#### A Vicarious Trip to the Barbary Coast

By Mary Berenson. Pp. xii+146+23 plates. (London: Constable and Co., Ltd., 1938.) 7s. 6d. net.

**M**R. BERENSON, owing to ill-health, was unable to accompany her husband on a trip through Italian North Africa to visit the archaeological sites and examine the collections of antiquities in the museums. From the detailed descriptions and the accounts of incidents on the journey, which were conveyed to her in letters, and with the aid of guide-books, maps, and authoritative works of reference,