

Book Notices.

Traité Theoretique et Pratique des Moteurs a Gaz et a Petrole. Par Aimé Witz, Ingénieur des Arts et Manufactures, Docteur ès Sciences, etc., etc.; 4^e édition, refondue et entièrement remaniée. Tome 1 (4to, pp. vii + 504). Paris : E. Bernard, Imprimeur-Editeur. 1903.

This elaborate treatise on gas and oil engines has grown from a small duodecimo volume of 288 pages, first issued in 1886, to the imposing quarto, of which the first volume is above designated. The author is a voluminous writer on the subject and the present volume may be regarded as his *chef d'œuvre*. It treats of the history and classification of motors, the gas of cities and carburetted air, lean gas, the gas of blast furnaces, acetylene, petroleum, gasolene and alcohol; of the theory of gas motors, methods of calculating their power, and the results of tests of their efficiency. This volume is well printed and finely illustrated. W.

Grundriss der reinen und angewandten Elektrochemie. Von P. Ferchland, Dr. phil. Mit 59 Figuren im Text. (8vo, pp. vii + 271). Halle a. S.: Wilhelm Knapp. (Price, 5 marks.)

This work appears to be a thorough treatise on the principles of electrochemistry. It discusses the subject under three heads. After a brief historical introduction, the first part is devoted to the consideration of electrolytic conduction, in which are treated the fundamental concepts, Faraday's laws resistance and conductivity, the theories of Grotthus, Clausius and Arrhenius; the relations between the theory of electrolytic dissociation and the modern theory of solutions, etc., etc.

The second part discusses the energy modifications in electrolytic processes, under which are treated the calculations and measurement of E.M.F.s E.M.F.s and the mechanical theory of heat, the osmotic theory of Nernst, polarization, etc.

The third part treats of Special and Applied Electrochemistry, embracing electrothermic processes, technical electrolysis, secondary batteries, etc.

The mechanical make-up of the book is excellent.

W.

Electric and Magnetic Circuits. By Ellis H. Crapper, M.I.E.E., Head of the Electrical Department, University College, Sheffield. (8vo, pp. v + 379.) London : Edward Arnold. New York : Longmans, Green & Co. 1903.

This book is described as being the introductory volume of a treatise on electrical engineering. It deals with the fundamental principles of electricity and magnetism and seeks to explain all the essential relationships of electric and magnetic circuits met with in continuous current working.

The subject is treated under the following heads, viz. : Practical Electric Units, Electric Circuits and Electric Effects, Principles of Distribution and Design of Mains, Magnetism, The Magnetic Circuit, Coil-Winding Design,