DOLEZALEK, F. (transl. C. L. VON ENDE).—The Theory of the Lead Accumulator (Storage battery). 11+241 pp., 3 Figs. Wiley & Sons, N. Y., 1904. Cloth $2.50.

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VAN'T HOFF, J. H. (transl. A. SMITH).—Physical Chemistry in the Service of the Sciences. Decenial Publications of University of Chicago. Series 2, volume XVIII. 123 pp. The University of Chicago Press, 1903. $1.50.

MENDELÉEFF, D. (trans. G. KAMENSKY).—An Attempt toward a Chemical Conception of Ether. 51 pp. Longmans, Green & Co., London, 1904. 2s. net

MOISSAN, H. (transl. V. LENHER).—The Electric Furnace. The Chemical Publishing Co., Easton, Pa., 1904. $2.50. A second translation by A. F. de Mouilpied has been published by Longmans, Green & Co.

NERNST, W. (transl. C. S. PALMER and R. A. LEHFELDT).—Theoretical Chemistry. Second English from fourth German edition. 771 pp. Macmillan & Co. $3.75.

RECENTLY ESTABLISHED JOURNALS.

Electrochemical and Metallurgical Industry (first two volumes "Electro Chemical Industry").—Edited by E. F. Roeber, began Jan., 1903; 12 numbers a year (1 vol.). The Electrochemical Publishing Co., N. Y. $2.00 per year.

Journal de Chimie Physique.—Edited by P. A. Guye, began 1903; 8 to 10 numbers form yearly volume of 600 to 700 pp. Gauthier Villars, Paris. 25 Francs per volume.

Physikalisch chemisches Centralblatt. Edited by Max Rudolphi in Darmstadt. Began with year 1904. 24 numbers form yearly volume. Vol. I, 808 pp. Reviews are printed in German, English or French. Gebr. Borntraeger, Leipzig. 30 Marks per year.

Zeitschrift für wissenschaftlicher Photographie, Photophysik und Photochemie.—Edited by H. Kayser, E. English and K. Schaum. Began March, 1903. 12 numbers a year (1 vol.). J. A. Barth, Leipzig. 20 Marks per year.

NEW BOOKS.

ELECTRIC FURNACES AND THEIR INDUSTRIAL APPLICATIONS. By J. WRIGHT. New York: The Norman W. Henley Publishing Co., 132 Nassau Street. Price, $3.00.

In fourteen sections, as they are called, covering 283 pages, the author presents most interesting and very instructive data in regard to electric furnaces. In the first three sections the various kinds of furnaces are presented, accompanied by historical and general statements of value. Thus mention is made that "the

natural gases, petroleum, bitumen, graphite, corundum, etc., ...can be artificially produced.....by the direct or indirect aid of the electric furnace." Considerable detail is given to the discussion of the production of carborundum. Acheson first made this substance in 1893, manufacturing in that year 6¾ tons of it, and in 1902 nearly 3,000 tons.

Taylor's carbon bisulphide furnace is the only furnace mentioned in connection with that industry. By means of it considerably more than 5,000 pounds of carbon bisulphide can be made in twenty-four hours.

The production of calcium carbide is exhaustively treated in about 48 pages. Almost every form of furnace, applied in this work, is discussed. "The cost of calcium carbide manufacture must necessarily be governed by local conditions, source of power, cost of raw materials, etc., so that it is impossible to formulate any hard and fast rule on the subject."

The presentation "of iron and steel in the electric furnace" will fix the reader's attention and prove highly suggestive. The production of other metals in the electric way is also considered.

The chapter devoted to phosphorus is necessarily brief. The main difficulty experienced in its manufacture in the electric furnace "is the necessarily high temperature at which the vapor leaves the furnace chamber. "Tatlock is authority for the statement that one-half the world's production of phosphorus, about 1,000 tons, was manufactured in the electric furnace (1899). The limited space allowed this review precludes a description of any one of the furnaces used for this particular purpose. If they actually yield the quantities indicated, it surely cannot be long before electrolytic phosphorus will be the only phosphorus handled in trade.

The glass manufacture in the electric way is touched upon. It is very evident that much experimentation will be required in this direction before speaking enthusiastically, although the preliminary trials have been encouraging.

The well known processes used in making aluminium receive fair consideration. In 1903 there were "nine factories engaged in the production of aluminium, either by the Hall or Heroult process; they are located as follows: America, 3; United Kingdom, 1; France, 2; Germany, 1; Switzerland, 1; Austria, 1. The several plants operated and controlled by the Pittsburg Reduction Co.

are capable of manufacturing 4,500 tons of aluminium per annum.

Various other metals claim moderate consideration. Thus, of calcium it is said to be "of great value in various industries as a reducing agent, the only drawback to its wide-spread use being its comparatively high market value." The schemes developed by Borchers and by Arndt for making electrolytic calcium are the only processes described. The plan of Rathenan and that of Goodwin appeared after the author had passed his manuscript to the publisher, so in that way their absence is explained. By these latter methods, so much alike, yet developed independently of one another, it would seem that the problem of calcium manufacture has really been solved. The applications of the metal now await development. It will be of interest to learn how well strontium and barium can be isolated electrolytically.

The concluding sections consider the application of the electric furnace to scientific research, tube furnaces, electrodes, efficiency and theoretical considerations, measurement of furnace temperatures, etc.

The book is an excellent compilation. It will be read with great interest by all chemists and will surely suggest new ideas and possibilities to the student of theoretical and practical electrochemistry. Its appearance is very timely.

EDGAR F. SMITH.

THE SESQUITERPENES. A monograph. BY OSWALD SCHREINER, with a preface by EDWARD KREMERS. 130 pp. Pharmaceutical Review Pub. Co., Milwaukee, Wis., 1904. Price, $1.00.

This is Monograph No. 9 in the Pharmaceutical Science Series, edited by Dr. Kremers. Numerous investigations have been conducted in the field of terpene chemistry during the past twenty years, and yet but little knowledge has been accumulated concerning the chemical character of the so-called "sesquiterpenes," $C_{15}H_{24}$. The author has collected, classified and arranged, in convenient and readily accessible form, the scattered facts on record about this interesting group of compounds, and the resulting monograph constitutes a concise resumé of our knowledge of the subject. The arrangement of the matter is as follows: I, Introduction. II, General Part—(1) The position of the sesquiterpenes in the various systems of classification of terpenes at large $(C_5H_8)_x$; (2) The position of the sesquiterpenes in the modern rational system of classification of hydrocarbons; (3) classification and com-