is a reprint of Dr. Angus Smith's report on the Incrustation in Boilers near Manchester, England, first printed in 1859 and repeated here with the chemical nomenclature in the old style.

Nearly one-half of the book is taken up with a description of condensers, feed heaters and feed pumps, pp. 149-288. Fifty pages are devoted to a description of water softening apparatus common to England and the Continent. No American types are referred to. The book may not be without interest to the engineer, but has little of value for the chemist.

S. W. PARR.

SCIENTIFIC ASPECTS OF WATER PURIFICATION. BY FREELAND HOWE. 8vo, pp. 53. Pittsburgh Filter Mfg. Co., 1906.

In the preface, the author states that "the writer's principal desire is to present to others the ideas which make water purification more comprehensible and simple to him." It is possibly comprehensible that one may dwell so persistently among the ions as to be able to make truthfully such a statement as the one quoted, but to the ordinary individual, the descriptive matter of this little treatise will seem to give the rather simple problems of water purification a most terrific twist to bring them into the "scientific aspect" of the author. One example may be cited as illustrative of the general plan of "simplification." The familiar reaction of Prof. Clark for the softening of water is put thus: "If an increase of a solid phase in contact with the system resulted in the increase in concentration of one of the ions, when the system was already saturated with respect to that ion, there would be a change. The point of saturation would be reached and the solid phase of the least soluble of the components would separate out. This is what happens when lime is added to a system containing the ions, carbanion (CO_3''), hydro-carbanion (HCO_3') and the calcion (Ca'') and magnesium (Mg'')." The author states that "all the salts are in a state of electrolytic dissociation . . . each chemical or group of elements exists as ions or atoms with charges of either positive or negative electricity he discusses as illustrations, hydrion, diferrion, triferrion, etc., but does not say anything about silicon. Any discussion of quantivalent reactions seems to be avoided. This would require distribution of ions in conformity with the every day conceptions of the compounds involved. The nearest approach is in the following paragraph taken from page 32. "Sulphanion can be almost completely removed by supplying barion . . . It is rendered non-scale forming by supplying it with sodium or potassium, but the resulting sulphates of sodium and potassium causes foaming." It is difficult to determine whether the last clause is a lapse or a concession. In general here is another illustration of a fine system put to bad service. If the work is intended as a dissertation on physical chemistry, it would seem that an un-

fortunate topic illustrative of that subject had been chosen. It can hardly be taken seriously as an elucidation of the facts pertaining to water softening, except in those parts where elaborate quotations (Thirteen pages) are made from Handy, Cairns, Fresenius, Kennicott, Campbell, etc.

S. W. PARR.

WATER FILTRATION AND ITS RELATION TO MUNICIPAL HEALTH AND PROSPERITY. F. B. LEOPOLD. 29 pp. Pittsburgh Filter Mfg. Co.

This pamphlet well illustrates the quotation made in the introduction that "It is better to fence the precipice at the top than wait with an ambulance at the bottom." A brief review of the principal typhoid epidemics is given. Plymouth, Pa., Grand Forks, N. D., Ithaca, N. Y., Butler, Pa., and Columbus, O., together with very convincing evidence as to the efficiency of properly devised and conducted filtration plants. The increasing necessity for safe-guarding water supplies makes this brief discussion timely and valuable.

S. W. PARR.

RECENT PUBLICATIONS.

ARRHENIUS, SVANTE. THEORIES OF CHEMISTRY, being Lectures delivered at the University of California. Edited by T. Slater Price, London: Longmans, Green & Co. 1907. 203 p. 8vo. 5s.6d.

BERSCH, J. DIE ESSIGFABRIKATION. 5, erweit. Auflage. Wein; 1907. gr. 8 227 ss. M. 3.

BUTTERFIELD, W. J. A. CHEMISTRY OF GAS MANUFACTURE. 24th edition. Vol. I. London; 1907. 8vo. 278 p. 8s.

CORBIN, H. E. AND STEWART, A. M. HANDBOOK OF PHYSICS AND CHEMISTRY. 3rd edition. London; 1907. 7s.

FRITSCH, J. FABRICATION DES COLLES ET GÉLATINES. Paris; 1907. M. 3.

GEORGIEVICS, G. V. LEHRBUCH DER FARBENCHEMIE 3, Auflage. Wein; 1907. gr. 8. 414 ss. M. 10.

HERRICK, R. F. DENATURED OR INDUSTRIAL ALCOHOL. New York; J. Wiley & Son. 1907. 8vo. 512 p. $4.00.

HOWE, JAS. LEWIS. INORGANIC CHEMISTRY FOR SCHOOLS AND COLLEGES. A second edition of "Inorganic Chemistry According to the Periodic Law," by F. P. Venable and J. L. Howe. Easton, Pa.; The Chemical Publishing Co., 1907. 8vo. 409 p. $3.00.

KAUFFMANN, H. ANORGANISCHE CHEMIE. Volkshochschulvorträge. Stuttgart; 1907. gr. 8. 179 ss. M. 3,60.

KÖTHNER, P. AUS DER CHEMIE DES UNGREIFBAREN. Ein Blick in die Werkstätten moderner Forschung. Osterwieck; 1907. gr. 8. 145 ss. M. 2.

KRATZER, H. WASSERGLAS UND INFUSORIENERDE, deren Natur und Bedeutung für Industrie, Technik, und Gewerbe. 2, Auflage, neubearbeitet von L. E. Andés. Wein; 1907. gr. 8. 215 ss. M. 3.

LADENBURG, A. VORTRAGE ÜBER DIE ENTWICKLUNGSGESCHICHTE DER CHEMIE VON LAVOISIER BIS ZUR GEGENWART. 4, vermehrte Auflage. Braunschweig; 1907. gr. 8. 417 ss. M. 12.

MEYER, T. DIE FABRIKATION VON SULFAT UND SALZSAURE. Halle; 1907. gr. 8. M. 3.40.