THE SPINNING AND TWISTING OF LONG VEGETABLE FIBRES (FLAX, HEMP, JUTE, TOW AND RAMIE). By H. R. CARTER. *Second Edition, revised and enlarged, with 208 illustrations.* Pp. xvi + 434. (London: Charles Griffin and Co., Ltd. 1919.) Price 24s. net.

The author of this book is ambitious when he endeavours to include in one volume the comprehensive and technical treatment of preparing, carding, spinning and twisting of flax, hemp, jute, tow and ramie yarns; of the manufacture of thread, twine, cords and ropes as well as chapters on mill construction, boilers, engines, steam, water power and power transmission. Any one of the subjects is worthy of fuller and more adequate technical and systematic treatment than is here given. The author claims that the same general principles underlie the preparing and spinning of all "long" vegetable fibres; he might have gone further and included worsted preparing and spinning.

It is certainly confusing when the continuity of the matter is broken by references to each contemporary subject in turn. The sequence of operations is interrupted when the treatment of waste, its preparation and spinning is introduced. It would have been better to have dealt with this section in a separate part of the book and as a distinct industry—which it is. The processes of reeling and bundling should naturally have followed wet spinning. The introduction and discussion of boilers, engines, steam, water power and power transmission are foreign to a book of this character.

The book contains a mass of valuable technical and practical information, but it is scrappy, and the description of machinery details is loose—similar parts being often described by several names which are known to only a few in the trade. A better way is to adopt the common name and adhere to it throughout.

Much of the descriptive matter is inadequate and most of the illustrations are of the machine maker's catalogue type. Many of these are photographs or pictures and occupy a full page or nearly so—they appear without numerals and letters of reference. Such illustrations from a technical point of view are practically useless to the reader or student unless supplemented by specially prepared line diagrams which illustrate the essential details and parts of the mechanism.

Reverting to a few of the points discussed, reference is made on page 27 to the Legrand system of artificial retting, which process can be conducted during 6½ months of the year. Figures are given to illustrate the cost of this process. A further reference on page 30 states that the process is possible all the year round. No explanation is offered for the shorter season on which the figures are based. In connexion with flax roughing (p. 50), 6 to 8 pieces per lb. are given as the usual "plecing" out size. On page 52 the range of pieces per lb. is given as from 2 to 8; such differences in a standard book are misleading and liable to confuse the reader and student alike. The reference to the setting of the sheets in the hackling machine is misleading (p. 60). The author's "recommendations" of setting point to point at the coarse end and slightly intersecting at the fine end are common practice. On page 90 the author rightly says that the weight of the levers should be considered when working out the total pressure on the drawing rollers, yet the solution supplied neglects these lever weights.

Speaking generally this volume is interesting for its historical survey and general description of the textile fibres and the preparation of the raw materials with which it treats.

The incidental comparisons of the subsequent descriptions of the operations and processes in-

volved in the manipulation of the various materials into their respective yarns, threads, twine and ropes of the different industries is not only interesting but instructive and helpful, as comparisons always are. F. BRADBURY.

OSMOTIC PRESSURE. By ALEXANDER FINDLAY. *Monographs on Inorganic and Physical Chemistry. Second edition, with 10 figures.* Pp. 116. (London: Longmans, Green and Co. 1919.) Price 6s. net.

The second edition of Prof. Findlay's "Osmotic Pressure" retains all the essential features of the original work, but embodies also the most important of the developments that have taken place both on the experimental and on the theoretical side during the past six years. On the experimental side attention is directed to the wide alterations in the type of apparatus used by Morse and his colleagues in Baltimore, including the use of an electrical pressure gauge, whilst on the theoretical side the work of F. Tinker is of special interest. The book is a most valuable monograph and is likely to continue its career of usefulness with increased efficiency in the form in which it is now presented. T. M. LOWRY.

PUBLICATIONS RECEIVED.

GAS AND FUEL ANALYSIS FOR ENGINEERS. By A. H. GILL. *Eighth revised edition.* Pp. vi+145. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd. 1917.) Price 6s.

THE CHEMISTRY AND MANUFACTURE OF HYDROGEN. By P. I. TEED. Pp. 152. (London: Edward Arnold. 1919.) Price 10s. 6d.

THE METALS OF THE RARE EARTHS. By J. F. SPENCER. *MONOGRAPHS ON INORGANIC AND PHYSICAL CHEMISTRY, edited by ALEXANDER FINDLAY.* Pp. x + 279. (London: Longmans, Green and Co. 1919.) Price 12s. 6d.

INDUSTRIAL HANDBOOK. *Indian Munitions Board. Revised edition 1919.* Pp. 417. (Calcutta: Superintendent Government Printing, India. 1919.)

ETUDES DE PHOTOCHIMIE. By V. HENRI. Pp. 218. (Paris: Gauthier-Villars et Cie. 1919.) Price 21 fr. 60 c.

THE ENERGY RESOURCES OF THE UNITED STATES: A FIELD FOR RECONSTRUCTION. By C. G. GILBERT and J. E. POGUE. *The Mineral Industries of the United States. Smithsonian Institution. Bulletin 102, Vol. I.* Pp. 165. (Washington: Government Printing Office. 1919.)

THE INTERNATIONAL MOVEMENT IN FERTILISERS AND CHEMICAL PRODUCTS USEFUL TO AGRICULTURE. (9th Review. 1918.) *Documentary Leaflets of the International Institute of Agriculture, Rome.* Pp. 44.

OPPORTUNITIES IN CHEMISTRY. By ELLWOOD HENDRICK. Pp. 102. (New York and London: Harper and Brothers. 1919.) Price 8s. 6d.

DIE HYGIENE DES WASSERS. *Gesundheitliche Bewertung, Schutz, Verbesserung und Untersuchung der Wässer.* By Dr. AUG. GÄRTNER. With 93 illustrations and 11 tables. Pp. 352. (Braunschweig: Friedr. Vieweg und Sohn. 1915.)

APPARATE UND ARBEITSMETHODEN ZUR MIKROSKOPISCHEN UNTERSUCHUNG KRISTALLISIERTER KÖRPER. By C. LEISS and Dr. H. SCHNEIDERHÖHN. With 94 illustrations. Pp. 94. (Stuttgart: Franckh'sche Verlagshandlung. 1914.)