

elementary texts on physics is "to eliminate a few subjects which have no practical bearing, and the relations of which to the fundamentals cannot well be made apparent; to present difficult subjects fully and in simple terms; and to connect each subject, directly or indirectly, with every other by fundamental principles or their corollaries."

This plan has been carefully and conscientiously followed and the resulting book is on the whole to be recommended. The weakest part is the "Manual of Experiments," but as most schools use a separate manual, this cannot be accounted a serious defect.

C. E. LINEBARGER.

A TEXT-BOOK OF ORGANIC CHEMISTRY. BY DR. A. F. HOLLEMAN. Translated from the Second Dutch Edition by A. JAMIESON WALKER, PH.D., assisted by OWEN E. MOTT, PH.D., and with the coöperation of the author. New York: John Wiley & Sons. 1903. 72 figures. Cloth. 8vo. xvii + 555 pp. Price, \$2.50.

The purpose of the author is to bring out distinctly the underlying principles upon which the division of the subject is based, the experimental proof for the constitutional formulas assigned, the bearing of physico-chemical theories upon the problems of organic chemistry, and the like, rather than to describe a large number of compounds or record a confusing mass of isolated facts; in a word, to provide a text-book which should give a clear presentation of the theoretical aspects of organic chemistry, rather than a condensed "Beilstein." The author's purpose has been carried out with very satisfactory results in the present work, an excellent text-book, widely and favorably known, this new edition being as nearly up-to-date as can reasonably be expected of any text-book. A second German edition has already appeared of the work, and an Italian translation is in preparation; English-speaking students will therefore be grateful to Messrs. Walker and Owen for this translation of the latest Dutch edition. The publishers' work is well done, the book being gotten up in very attractive form, clearly printed on good paper.

MARSTON T. BOGERT.

SIDEROLGY: THE CONSTITUTION OF IRON ALLOYS AND SLAGS. BY HANNS FREIHERR VON JUPTNER. Translated from the German by CHARLES SALTER. London: Scott Greenwood & Co.; New York: D. Van Nostrand Co. 1902. viii + 344 pp. Price, \$5.00.

The original edition of this book has been reviewed in this

Journal (23, 117); in the present review we shall speak only of the translation. The translator has proved the exception to all rules, and has omitted a preface of his own. Perhaps under the circumstances it would be well to be charitable, and forgive some of the faults of the book, inasmuch as we are not informed of the conditions under which it has been produced. It is impossible, however, not to mention some of them.

The translation is similar to the original in all respects, with the single exception of the valuable bibliography which appeared at the end of the original. This has unfortunately been omitted in the translation. In the second volume the author included much valuable material on the application of the phase rule to the equilibrium phenomena of iron and carbon, which had been published by Roozeboom, Le Chatelier, and others after the first volume had appeared. As this will, ultimately, be included as part of the first volume by Jüptner, it seems a great pity that the translator did not see fit to incorporate it in its proper place.

On reading carefully through the book one is confronted by many inaccuracies, either original or copied from the German edition, which seems to indicate that the translator has not brought that love of duty, and knowledge of his subject to his aid which would provide a translation worthy of the original. It would be idle to mention all of the mistakes noticed, but some of the most striking will be referred to.

In regard to proper names, we find on page 10, *Gouthrie*, which should read Guthrie, copied from the original; on page 86, Sorby reads Storby; and E. D. Campbell appears in several places bearing the initials E. W. The terms inter-crystalline and inter-granular which originated with Stead in England, reappear in English as *intra-crystalline* and *intra-granular*; crystallites become crystalliths. In the text the spelling pearlite is used, while the German *perlite* is used to designate the micrographs of this constituent.

The translation of some of the German words is particularly unhappy. Speaking of boring steel under water to collect the gases, anbohren is translated *broached*; uebergiesst as *suffuses*; zerhacktes as *hacked-about*; Glimmer ähnlich Blättchen as *scales analogous to mica*; gedacht, as *imagined*; Bestandtheile, as *compound*. Many other such mistakes are noticed.

It is to be regretted that so many evidences of carelessness are noticeable, but even with these the book is sure to be welcomed by those who are unable to read the original, and who are interested in the scientific treatment of the constitution of iron and its alloys. The book comes from the press in very attractive form, but the reviewer can see no reason why the reader should be forced to accept with it thirty-five pages of advertising matter. HENRY FAY.

PHYSICO-CHEMICAL TABLES FOR THE USE OF ANALYSTS, PHYSICISTS, CHEMICAL MANUFACTURERS AND SCIENTIFIC CHEMISTS. BY JOHN CASTELL-EVANS, F.I.C., F.C.S., Superintendent of the Chemical Laboratories and Lecturer on Inorganic Chemistry and Metallurgy, at the Finsbury Technical College. Volume I, Chemical Engineering and Physical Chemistry. London: Charles Griffin and Co., Lim.; Philadelphia: J. B. Lippincott Co. 1902. xxxii + 548 pp. Price, \$8.00.

This volume contains not only what its title in the narrower sense denotes—the physical constants of chemical substances, but also the values of various mathematical functions and of the relations of units in different systems, data pertaining to materials used in construction, and tables of many original calculations made by the author with the purpose of facilitating reductions and corrections and avoiding interpolations or calculations from empirical formulas. Most of the important quantities are expressed both in English and in metric units. The principal physico-chemical constants included in this volume are specific volumes and gravities and heat-expansions; specific heat-capacities and heats of fusion, vaporization, and solution; compressibilities; vapor-pressures; boiling-points, and melting-points.

The two most striking defects of the book revealed by a cursory examination are the absence of references to the original literature and the utter disregard of the significance of figures; thus in the mathematical tables many functions are given with three to seven more digits than the corresponding argument, and in the physical tables compressibility-coefficients are given with three or four figures when the unit is the atmosphere, with seven when the unit is the kilo per square millimeter or the ton per square inch, and specific heat-capacities and vapor-pressures are given with six figures, though the results of different investigators vary greatly in the fourth figure, etc.

In spite of these defects the book contains an enormous mass of data