This book is readable to the layman and will give a comprehensive view of the value of the application of chemistry to most any manufacturing business.

To the student it is concise history of scientific advancement during the last century.

RAILROAD STRUCTURES AND ESTIMATES

Reviewed by J. R. W. Ambrose
Chief Engineer, Toronto Terminals R'y. Co.

By J. W. Orrock, M.Can.Soc.C.E. Published by John Wiley & Sons, Inc., New York, and Chapman & Hall, Limited, London; Canadian selling agents, Renouf Publishing Co., Montreal. Second edition, 1918. 574 pages, 272 figures, 6 x 9 ins., flexible binding. Price, $5 net.

The author has covered the field so thoroughly that the work is invaluable to the experienced engineer as well as to the student, and every superintendent would do well to keep a volume in his office bookcase for ready reference.

To make an exhaustive review of this work would require more space than is at my disposal. It will suffice to say that there is no department of the construction and maintenance of railways that is not covered. The book is so profusely illustrated with detail drawings and estimates that even the comparatively inexperienced is enabled to check or design railway structures of all kinds.

Estimates of costs are given in all cases, and while these are based upon pre-war prices, they can easily be changed to suit local conditions.

The formulæ given for estimating the cost of steel and wooden bridges are new and based upon actual experience, making them of exceptional value.

The work really embodies a complete set of railway standards which has required years of experience to formulate.

MECHANICAL LABORATORY METHODS OF TESTING MACHINES AND INSTRUMENTS

Reviewed by Prof. Robt. W. Angus
University of Toronto

By Julian C. Smallwood, M.E. Published by the D. Van Nostrand Co., New York. Second edition, 1918. 399 pages, 5 x 7½ ins., 114 illustrations, flexible leather. Price, $3 net.

This is the second edition of a very useful and practical book for use mainly in engineering laboratories, although it contains many things that will prove of value to the practicing engineer. The author has divided the treatment of the subject into three parts, *viz.*, the testing of instruments, the analysis of combustion and the testing of power plant units.

The testing of instruments deals with a most useful, and too-frequently neglected, matter—the calibration of the scales, gauges, indicators, planimeters, etc., and the author has covered very fully and completely the ordinary instruments used.

The section on combustion is rather short but deals with useful matters, while under the testing of power plant units the author has discussed steam engines, boilers, pumps and other steam apparatus, gas engines, refrigerating machines and air compressors. He has devoted relatively little space to the matter of hydraulic turbines and pumps, which, however, seems consistent with the title of the book. There is practically nothing on electric testing.

On the whole, the book is very well written, and is a helpful guide in the laboratory, and will prove suggestive to the consulting engineer who is doing mechanical testing at more or less infrequent intervals.

NOTES, PROBLEMS AND LABORATORY EXERCISES IN MECHANICS, SOUND, LIGHT, THERMO-MECHANICS AND HYDRAULICS

Reviewed by Prof. Peter Gillespie
University of Toronto

By Halsey Dunwoody, late acting professor of Natural and Experimental Philosophy. Published by John Wiley & Sons, Inc., New York, and Chapman & Hall, Limited, London; Canadian selling agents, Renouf Publishing Co., Montreal. 369 pages, illustrated, 6 x 9 ins., cloth. Price, $3 net.

This book is essentially a book of problems supplemented by various theoretical and historical notes intended to elucidate the subjects to which the problems relate. It was prepared by the author as a reference text in connection with his course in "Natural and Experimental Philosophy" at the U.S. Military Academy, and to a large extent is a compilation of notes and exercises drawn from the syllabi of several technological schools, including the Massachusetts Institute of Technology and the Worcester Polytechnic. The problems are exceedingly varied, covering as they do dynamics, machines, heat, sound, light, hydromechanics and graphic statics and should afford an excellent field for selection for those entrusted with the teaching of those subjects in engineering schools. The theoretical treatment is generally brief but adequate.

TESTING FOR THE FLOTATION PROCESS

Reviewed by F. C. Dyer
University of Toronto

By A. W. Fahrenwald, Professor of Mining and Metallurgical Engineering, New Mexico State School of Mines. Published by John Wiley & Sons, Inc., New York, and Chapman & Hall, Limited, London; Canadian selling agents, Renouf Publishing Co., Montreal. First edition, 1917. 173 pages, illustrated, 4¼ x 6¾ ins., flexible binding. Price $1.50.

This book is a convenient and compact resumé of the latest ideas concerning flotation. Before describing the laboratory tests and apparatus the author gives enough of the theories and fundamentals of the various processes to make the actual testing intelligible. The part concerning colloids and emulsions is well written, leaving out a lot of unnecessary phraseology and ambiguous terms. The chapter on oils will be found useful, much of the success or failure of flotation being due to a choice of oils. The chapters on oxidized ores, flotation costs, and tables help to complete a book that will be found very handy for anyone engaged in flotation practice.

DIFFERENTIAL AND INTEGRAL CALCULUS

Reviewed by Prof. Alfred Parker
University of Toronto

By H. B. Phillips, Ph.D., Massachusetts Institute of Technology. Published by John Wiley & Sons, Inc., New York, and Chapman & Hall, Limited, London; Canadian selling agents, Renouf Publishing Co., Montreal. 356 pages, 5 x 7¼ ins., cloth. Price, $2 net.