

**How to Make a Transformer for Low Pressures.** By F. E. Austin, Professor of Electrical Engineering, Thayer School of Civil Engineering, Hanover, N.H. Published by the author. Second edition, 1915. 18 pp., illustrated, 5 x 7 ins., cloth. Price, 40c. net.

Those interested in transformer construction will find this little book exceedingly interesting and useful. It answers a number of questions pertaining to fundamental principles and solves numerous problems which the amateur transformer maker is likely to meet. The book describes the process of construction step by step.

**The Testing of Machine Tools.** By George W. Burley, Department of Engineering, University of Sheffield. Published by Scott, Greenwood & Son, London. First edition, 1915. 226 pp., 110 illustrations, 5 x 7 ins., cloth. Price, \$1.00 net.

This work is published as Volume 18 of the Broadway Series of Engineering Handbooks. The author deals with the various aspects of machine-tool testing in such a way as to make the book of special value to engineer apprentices and students, as well as to superintending engineers. There are eight chapters, the first being introductory, and the others devoted to the following phases of the study: Tests of Machine-tool Elements for Accuracy; Speed and Feed Tests; Mechanical Efficiency Tests; Cutting Force Tests; Output and Power Consumption Tests; Comparative Tool Testing; and, Commercial Machine Tool Testing.

From the above it will be noted that the author has devoted much space strictly to the subject of testing. It is to be pointed out, however, that the descriptions refer to methods and instruments rather than to the consideration of published results of tests, although the latter have by no means been neglected.

The illustrations are clear and uniform and the book is well printed.

**Descriptive Geometry.** By H. W. Miller, M.E. Published by John Wiley & Sons, Inc., New York; Canadian selling agents, Renouf Publishing Co., Montreal. Third edition, 1915. 149 pp., 98 illustrations, 5 x 7 ins., morocco. Price, \$1.50 net.

This book explains very clearly all the principles of descriptive geometry, including shades, shadows and perspective.

It has evidently been prepared to fit the courses in descriptive geometry and drawing of the University of Illinois rather than as a text for general use.

The use of abbreviated spelling is a feature of the book which might be criticized.

**The Corrosion of Iron.** By L. C. Wilson. Published by the Engineering Magazine Co., New York City. First edition, 1915. 178 pp., 5 x 7 ins., cloth. Price, \$2.00.

This is the latest publication belonging to the Works Management Library in connection with which a great many very useful publications have appeared. The question of corrosion is one which has occasioned a great deal of concern and the present volume, which is essentially a summary of causes and preventive measures, is one which will be found of similarly extensive service. The author has assembled and condensed the most interesting and important studies and facts connected with corrosion, which has received scientific attention for a comparatively few years, and with protective processes which are accord-

ingly new. Special information of practical value concerning processes of materials available for the preservation of iron and steel in large or small shops render the book of interest to a particularly wide field.

Chapter headings are as follows: The Rust Problem; Theories of Corrosion; Protective Measures; Paint Materials; Protective Paints; Influence of Different Elements on the Corrosion of Iron; Corrosion of Wrought Iron and Steel Pipe.

**The Essentials of Descriptive Geometry.** By F. G. Higbee, M.E. Published by John Wiley & Sons, Inc., New York; Canadian selling agents, Renouf Publishing Co., Montreal. First edition, 1915. 210 pp., 173 illustrations, 6 x 9 ins., cloth. Price, \$1.80.

This book, as might be expected from the title, discusses all the essential features of descriptive geometry.

It not only explains the typical theoretical problems, but it also shows clearly their practical application, special attention being given to the development of surfaces.

The book contains a very interesting chapter on the making of paper models.

**Simplified Reinforced Concrete Mathematics.** By Melvin D. Casler, B.E. Published by D. VanNostrand Co., New York City. First edition, 1915. 66 pp., illustrated, 5 x 7 ins., cloth. Price, \$1.00 net.

This book relates to the derivation of simple, universal formulas and their application to beams, columns and arches. The author has succeeded in presenting many practical working formulas to obviate laborious computations in the design of reinforced concrete members. He refers the existing extensive supply of curves and tables available to the designing engineer as an evidence of theoretically evolved formulas of complex and cumbersome nature, and states his object to simplify these formulas without detracting from their mathematical accuracy.

A chapter is devoted to the derivation of formulas, the use of signs, assumptions, etc., then are presented ten formulas providing for combined stresses, ten others for beams and slabs, and six providing for dead weight of members. Labor-saving devices are considered in Chapter 2, e.g., reinforced concrete slide rule and a table of corresponding values of variables. Illustrative examples are given in Chapter 3, where nine problems are considered relating to beams, columns, arches, etc. In Chapter 4 the author presents general notes on reinforced concrete design with a section on web reinforcement. The work concludes with a useful nomographic computing device for use in problems of design.

**Directions for Designing, Making and Operating High-Pressure Transformers.** By Prof. F. E. Austin, Thayer School of Engineering, Dartmouth College, Hanover, N.H. Published by the author. First edition, 1914. 46 pp., 20 illustrations, 5 x 7 ins., cloth. Price, 65c.

After describing briefly the essential parts and functions of the transformer and illustrating the general principles underlying its operation, together with a discussion of core and hysteresis losses, power factor, ratio of transformation, etc., the author proceeds to outline step by step the essential features in designing a 3-kw., 20,000-volt transformer. Directions are also given for the construction of a 4,000-volt transformer and considerable data follows that will be found exceedingly useful by the experimenter.