

Jones and Laughlin Steel Company, of Pittsburg and Chicago. U.S.A. Pocket size, 300 pages, leather bound.

This revised edition of the above company's standard handbook contains data relating to beams, channels, and structural shapes. The permissible working shear and bearing for rivets has been brought up-to-date to make it consistent with the balance of unit loads used in proportioning steel structures. The standard specifications for structural steel are given in full and correspond with those adopted in 1903 by the Association of American Steel Manufacturers. Much old matter has been revised, while new material of value has also been added.

**"Electric Lamps."**—By Maurice Solomon, A.C.G.L., A.M.I.E.E. Published by Archibald Constable & Company, London. 321 pp., 112 illustrations, and 34 tables. Price, net, \$1.80. The book, as its name implies, is a treatise describing the manufacture, operation, testing and characteristic of electric lamps which have been proved a commercial success. The opening chapters briefly discuss artificial illumination, studying the characteristics that distinguish it from daylight, defining the various technical terms in common use and their importance in the science of illumination. The various photometers in use are described and the principles of their operation clearly given, with a discussion on the common methods of testing electric lamps. The practical manufacture of the carbon filament, Nernst and metallic filament lamps, is described in detail, taking up life tests, distribution of light and efficiency, accompanied by numerous general curves of distribution and efficiency. Arc lamps are discussed generally, touching on their characteristics, operation, efficiency, and the manufacture of carbons. The newer types of flame arc lamps being given considerable attention. The author concludes by comparing the various types of lamps as light producers and their use, giving tables showing the relative efficiency, including cost of power, maintenance and renewals. The book is well written by one familiar with the practical manufacture of lamps and contains much useful information.—F. A. G.

**Railroad Curves and Earthwork.**—By C. Frank Allen, S.B. Published by Spon & Chamberlin, 123 Liberty Street, New York. Leather binding,  $4\frac{1}{2} \times 6\frac{1}{2}$ ; pages, 225; price, \$2.00.

This is the fourth edition, and in revising this work the chapter on Turnouts has been rewritten so as to apply to split switches.

The book contains chapters on: 1. Reconnaissance. 2. Preliminary survey. 3. Location survey. 4. Simple curves. 5. Compound curves. 6. Reversed curves. 7. Parabolic curves. 8. Turnouts. 9. "Y" tracks and crossings. 10. Cubic spiral easement curve. 11. Setting stakes for earthwork. 12. Methods of computing earthwork. 13. Special problems in earthwork. 14. Earthwork tables. 15. Earthwork diagrams. 16. Haul. 17. Mass diagram. Tables and diagrams. Diagram for three level sections Base 14, slope  $1\frac{1}{2}$  to 1. Diagram for three level sections Base 20, slope  $1\frac{1}{2}$  to 1. Diagram for prismoidal correction, diagram for triangular prisms. It is a compact convenient work, handy to carry, complete and very useful on railroad location, construction or maintenance.

**Field and Office Tables.**—By C. Frank Allen, S.B. Published by Spon and Chamberlin, 123 Liberty Street, New York. Limp leather binding,  $4\frac{1}{2} \times 6\frac{1}{2}$ ; pages, 293; price, \$2.00.

This is a companion book for Railroad Curves and Earthwork by the same author. The two books may be secured in one binding for \$3.00.

It is hoped that these tables will be found more complete than those that have preceded. Great care has been taken by the author in the selection, arrangement and computation of these tables. The tables having been checked by several expert mathematicians to correct them from any errors. The tables given are:—Radii and their Logarithms, Tangent Offsets and Middle Ordinates, Tangent Distances for  $1^\circ$  Curve, Corrections for Tangent Distances, External Distances for a  $1^\circ$  Curve, Offsets from Tangent for a  $10^\circ$  Curve, Angles Proportional to Squares of Distances, Long Chords and Actual Arcs, Acres for Strip 100 Feet Wide, Curves for Metric System, Barometric Heights, Logarithms of Numbers, Logarithmic Sines, Cosines, Tangents and Cotangents, Auxiliary Tables for Logarithmic Sines and Tangents of Small Angles, Logarithmic Versed Sines and External Secants, Auxiliary Versed Sines and External Secants of Small Angles, Natural Sines and Cosines, Natural Tangents and Cotangents, Natural Versed Sines and External Secants, Lengths of Circular Arcs; Radius = 1, Squares, Cubes, Square Roots, Cube Roots and Reciprocals, Turnouts and Switches, Velocity Heights, Rise per Mile of Various Grades, Elevation of Outer Rail on Curves, Inches in Decimals of a Foot, Middle Ordinates for Curving Rails, Stadia Reductions, Horizontal and Vertical, Mean Refractions in Declination, Triangular Prisms; Cubic Yards per 50 Feet, Prismoidal Correction; Cubic Yards per 100 Feet, Three Level Sections; Cubic Yards for 50 Feet, Cubic Spiral Easement Curves, Numbers and Formulas, Explanation of Tables.

**Specifications.**—Compiled by the Canadian Inspection Company, Stair Building, Toronto, Ont., and Canadian Express Building, Montreal. Size,  $4\frac{1}{4} \times 6$ ; pages, 130.

This publication contains specifications for bridges, steel and malleable castings, steel rails, splice bars, track spikes, track bolts, galvanized iron wire, woven wire fence, cast iron pipe, and cement.

It also contains several pages of useful tables dealing with weight, specific gravity of materials, etc.

**Co-Ordinate Geometry as Applied to Land-Surveying.**—By Woodford Pilkington, M. Inst. C.E. Published by Spon and Chamberlain, 123 Liberty Street, New York. Size,  $4 \times 6$ ; pages, 46; price, 40 cents.

The author describes a method of making surveys and preparing diagrams to be used in the description and transfer of land where property is located by triangulation surveys. It would be a system admirably suited for Nova Scotia and New Brunswick where the records and systems of survey are so ill-defined and complicated.

**Essentials of Sanitary Science.**—By Gilbert E. Brooke. Published by Henry Kimpton, Holborn, London, E.C.

The edition is prepared specially for the student in sanitary science, and should prove of great value to medical men who desire to take up public health.

The sanitary engineer is at times faced with chemical questions arising out of his work, he will find the above concise edition extremely handy as a work of reference in throwing light upon questions affecting purity of water or sewage effluents. It is more a text-book than a treatise and deals extensively with definitions relating to questions in hydrostatics, pneumatics, heat, meteorology, air, water, disinfectants, bacteriology, vital statistics, sanitary administration, etc., etc. We are sometimes asked by the sanitary engineer to recommend a book which will explain many of the terms used by chemists and bacteriologists in dealing with water and sewage questions. We can recommend the above small volume as just giving the necessary information required.—T. A. M.