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BOOK REVIEWS.

Heat.—By E. M. Shealy, Assistant Professor of Steam Engineering, University of Wisconsin; published by McGraw-Hill Book Co., New York City; 262 pp.; 110 illustrations; 6 x 9 in.; cloth. Price, \$2. Reviewed by R. W. Angus, Professor of Mechanical Engineering, University of Toronto.

This book is one of the series prepared by the Extension Division of the University of Wisconsin and deals with the application of heat to various types of machinery, such as steam and gas engines, air compressors, etc. It is evidently written more from the view of the practical than of the technically trained man, as the use of formulas has been very largely avoided and where they do appear, they are not of a complicated nature, so that they are easily understood.

The first six chapters deal with the general principles required in studying the action of heat—e.g., temperature, work and power, transferring and measuring heat, as well as its generation and effect on gases. In many cases the discussion is illustrated by a simple physical experiment showing the meaning. Some attention has been given to insulation and heat transmission, through various substances, coefficients being supplied for practical application.

After the preliminary chapters the book follows along the same general lines as other books on applied thermodynamics except that the treatment is rather more elementary than is usual. Chapters VII. to IX. discuss the working fluids; gases and vapors, and include a table of the properties of vapors. The chapters on the steam engine are too brief and attempt to deal with too much—e.g., the Carnot's Cycle is dealt with in one paragraph and would not be of much help to a beginner whose ideas are not well formed.

The parts dealing with air compressors, gas engines and refrigerating machines are also brief but contain some very helpful material.

The work concludes with a chapter on house heating and should prove of help to men desiring an elementary general knowledge of the important applications of heat in the production of power, etc.

Engineers' Costs and Economical Workshop Production.—By Dempster Smith and P. C. N. Pickworth. Published by Emmott & Co., Limited, Manchester, Eng. 248 pp.; illustrated; 6 x 9 ins. Price, \$1.25.

Shop superintendents and others responsible for carefully watching and keeping down costs in engineering workshops

will appreciate the truth of a statement in the first chapter of this book which says "The acuteness of present day trading, however, has removed, in the majority of cases, the happy days of ample margins and has produced a state of affairs in which only by accuracy in the estimation of costs can a profit be relied on."

The book has avowedly been written "from the engineer's standpoint rather than from the accountant's."

After treating in the earlier chapters of the various qualities and grades of pig iron, wrought iron, steel and copper in commercial use, the authors pass on to specifications of materials as formulated by the British Engineering Standards Committee, thence to wage systems, shop organization, the time necessary for performing various operations, inspection work and classes of it, establishment charges, reserve maintenance and depreciation, freight charges, shipment of goods, cost keeping and estimating.

The foregoing shows that all the essential ground relating to cost of production has been covered and perusal of the book leads one to believe that the writers' know the subject with which they are dealing. It is evident that a great deal of time and care has been expended on this work, the subject matter is well put together and the diagrams are very clearly drawn. Avoidance of very abstruse mathematics is perhaps another point which will form a recommendation to some.

Practical Sanitation.—By George Reid, M.D., University of Cambridge; 17th edition. Published by Charles Griffin & Co., Limited, Exeter Street, Strand, London; 354 pp.; illustrated; 5¼ x 7½ ins.; cloth. Price, \$1.50 net.

It will be noticed that this book is in its 17th edition and has evidently, therefore, filled a want in Great Britain.

Like most of Messrs. Griffin's publications, the book is a good one, and will be found to contain much information useful to "Insanitary Spectres" (as the maid of all work termed them), and others interested, for whom it has been written.

The first half deals with water supplies, ventilation, drains and plumbing work generally, and examples of both good and bad work are given; owing to differing methods of working, and to the fact that some of the appliances used here are not quite the same as those employed in the old country, portions of this section will hardly apply here, but this does not detract from the value of the book as a whole. Since the author is a medical man he has been able to incorporate into the later portions of the book a good deal of information regarding infection and disinfection, food, etc., which is well put together and apparently up-to-date.

Hydraulics. By Ernest H. Sprague, A.M.I.C.E., Assistant at University College, London; formerly Professor of Engineering at the Imperial Chinese Railway College, Shan-Hai-Kuan; 184 pages; 89 figures. Cloth, 4¾ x 7½-in. Published by Scott, Greenwood and Son, London, Eng. Price \$1.

The author of this little book states that it has been compiled from his lecture notes and that it is intended to be