lettered and numbered. A plate on the different kinds of columns and splices with short explanatory notes, also adds to this section of the book. The woods used in house construction and trimming are briefly distinguished by pointing out the characteristic qualities of each. The subjects of plastering and painting are dealt with in a brief and taking manner, as is also roofing.

Following this detailed information on general house construction is a section devoted to the subject of estimating and specifications. These pages would undoubtedly be of particular interest to both the building contractor and the one who intends to build. The pages are well supplied with valuable tables for use in making estimates, as well as with many hints which it is possible to gather only from experience. Not least interesting from a constructive standpoint is the table on safe load of I-beams and the table of rafters. A list of terms used in carpentry is also of interest. Desirable types of blanks for specifications are shown.

Seventy-five pages devoted to plates of plans follow. In most cases each plate contains the floor plan, second-storey plan, and photograph of the house.

A section of the book is devoted to cement concrete work, in this the mixing and use of concrete for construction work is briefly explained. An instructive article, with cuts, on how to build a concrete silo is contained therein. There are in all over one hundred and fifty pages of the book given up to plans and photographs of different types of houses. The plates cover almost the full size of the page being in general about 11 x 6. The book is to be commended for its mechanical arrangement. The topics under discussion are set out from the explanatory material by conspicuous type, thus making it easy to locate the desired information.

Irrigation Engineering.—By Herbert M. Wilson, C.E. Sixth Edition. Published by the Renouf Publishing Co., Montreal, and John Wiley & Co., New York. Size 6 x 9, cloth. Price $4.00.

A volume containing 195 cuts, 38 plates, and 589 pages of reading matter, comprising an introductory chapter, six chapters on Hydrography, seven chapters on Canals and Canal Works, and six chapters on Storage Reservoirs.

The section devoted to Hydrography opens with a necessarily concise discussion of precipitation, run-off, evaporation, seepage, absorption and other basic phenomena relating to the subject in hand.

Chapter VI. of this section, on the subject of flow and measurement of water in open channels is of general interest. Chapters IV., V. and VII. deal more directly with the subject of irrigation, covering drainage, cause and prevention of alkali, water-logging, sedimentation, malarial effects and water-duty. Chapter VII. contains very interesting information regarding sewage irrigation, and the fertilizing effect of the same, also useful descriptive matter and cost data in connection with artesian wells.

In Section II. the subject of Canals and Canal Works is treated at some length and with considerable technical detail. Among the many illustrations, a number of detail plans are reproduced which aid greatly in elucidating the text.

In this section questions of canal alignment, survey methods, construction of wires, falls, sluiceways and distributaries, are taken up in detail. Chapter XIV. on methods of applying irrigation water, contains practical information and data which should be of much use to the layman as well as to the engineer.

Part III. on Storage Reservoirs is profusely illustrated and contains much descriptive matter and detail with reference to storage reservoirs of different types now in existence; also a short theoretical discussion on the design of masonry dams and weirs. The important question of choice of site and type of dam is also fully treated, and in chapter XIX., devoted to the discussion of motive power for pumping, is contained some interesting and unusual data in connection with the power of wind-mills and cost of production. The concluding chapter quotes the U.S. Reclamation Law in full, contains a copy of the specifications for the Roosevelt Dam and a summary of unit construction costs, both by contract and force account, on Reclamation Service projects.

Appended to each chapter is a list of books of reference covering the details of subjects discussed.

This volume is not a text-book, but a valuable book of reference for the practising engineer and agriculturist. While it contains much practical information and data of general interest and application, its great field of usefulness is in the Canadian West, where it should find a ready market.—H. G. A.

Pittsburg Standardized Reinforcement, 1910.—400 pp., 4 x 6. Published by Pittsburg Steel Products Co.

The purpose of this blue book is to furnish for reinforced concrete, as has already been done for structural steel, a handbook, the use of which will remove the necessity for tedious computation in the designing of modern structures. It has previously been necessary in work of this kind to make frequent use of basic formulae with its consequent tediousness and chance of error, and the manufacturers of the Pittsburg Standardized Reinforcement have succeeded admirably in their endeavor to produce a handbook of this type. To Wm. Barclay Parsons is due the credit for the various computations required; all sizes of material used as reinforcement having been tested under the supervision of the United States Government.

Their system of reinforcement is the commonly accepted one; the reinforced slab taking up most of the compression stresses in the beams. The reinforcing of the beams and girders is delivered in finished rigid units, the shear bars being electrically welded to the upper and lower beaded bars at an angle of 45 deg. The lower member consists of one or two bars per unit and the upper of one bar, and by the use of seventeen sizes of bar varying in section from $\frac{1}{4}$ to $2\frac{1}{4}$ in. the company is able to standardize thirty-four sizes of units or frames, and these again with a variation in depth and in the number used per beam give a range sufficient to cover almost all structural work. The slab reinforcement has a fair amount of longitudinal stability and this with the welded beam reinforcement units provides a form of construction so rigid that the bars, etc., will remain in place without trouble during the placing of concrete. Both beams and slabs have been computed principally on the formula $B.M. = \frac{1}{10} WL^2$, an exception being made for lintels which are taken as $B.M. = \frac{1}{8} WL^2$. This seems reasonable as the B.M. at columns or girders is then only $\frac{1}{4}$ that at centre and the reinforcement is kept at least 25 per cent. as strong at columns as at centre, but care should be taken to allow sufficient overlap in these upper bars, as there is, at a beam joint, only the friction between steel and concrete to take this tensile strength. There should also be a slight allowance made in the column due to the fact