

# The Engineer's Library

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## BOOK REVIEWS

### Hydro-Electric Power Stations

By David B. Rushmore and Eric A. Lof. Published by John Wiley & Sons, Inc., New York; Canadian selling agents, Renouf Publishing Co., Montreal. First edition, 1917. 822 pages, 408 illustrations, 6 x 9 ins., cloth. Price, \$6 net.

This treatise deals with the problems of design and operation of hydro-electric power stations. The chapters in their order are entitled: General Introduction, Hydrology, Classification of Development, Dams and Headworks, Water Conductors and Accessories; Storage Reservoirs, Power House Design, Hydraulic Equipment, Electrical Equipment, Economical Aspects, Organization and Operation, Three Appendices.

In such a book it is impossible to do more than direct the reader's attention to the essentials of proper and adequate design of power stations. The authors in this case have succeeded in indicating with clearness and conciseness, yet with sufficient detail, the primary requisites of modern, well-balanced design, and by means of references to current technical literature have shown where detailed information on special points may be found.

A glance over this book may lead the reader to infer that certain parts, particularly the hydraulic features, are treated in a cursory manner. This impression, however, is not sustained after a careful reading, as all the works appurtenant to any development are treated in sufficient detail to give correct methods. With the references mentioned above, the student should have no difficulty in advancing his knowledge of the subject.

The part of the book covering the electrical equipment describes modern practice and devotes considerable space to the application of current limiting reactors and to the rupturing capacities of oil switches.

Considerable space is devoted to a discussion of the economical aspects of developments, also to the operation and maintenance of plants.

The three appendices give a fairly complete list of references to articles in the engineering press describing large power developments in America, and a table gives the principal data on transmission systems operating at 70,000 volts and above.

This volume should prove valuable both to the student of hydro-electric engineering and to the operating engineer.

### Estate Economics

By Andrew Slater, late land agent to the War Department in the Southern, Northern and Scottish Commands. Published by Constable & Co., Limited, London. 264 pages, 87 illustrations, 5½ x 8¾ ins., cloth. Price, \$2.50 net. (Reviewed by H. L. Seymour, B.A.Sc., A.M.Can.Soc.C.E., Ottawa.)

As applied to towns and cities the term "town planning" is now well known if not always well understood. The equally important problem of rural planning is also beginning to receive some share of attention. In general,

it may be stated that the number of Canadian engineers who are interested in the scientific laying-out and development of land is on the increase. To such engineers Mr. Slater's work may make an appeal, though it treats entirely of estate or farm development in Great Britain.

To any engineer a consideration of the subject matter of the various chapters must indicate how useful a wide engineering knowledge may prove in rural development. In what might appear to many an elementary way, the author treats of many subjects with which engineers are more or less familiar; of the geology of soils, their origin and drainage; of the protection of the banks of water courses; of road construction and maintenance; of water supply and sewage; of motive power produced by natural and artificial means; of motor traction; of forestry; of farm buildings, fences, etc.

From the standpoint of greater production, which the author urges in his introduction, probably the most important chapter in the book is that entitled "The Utilization of Land." This chapter might seem to apply most particularly to those classes of British land owners, land agents and factors for whom the author hopes to provide a practical guide, but even here will be found several matters more or less of interest to engineers.

### A Treatise on Concrete, Plain and Reinforced

By F. W. Taylor and S. E. Thompson. Published by John Wiley & Sons, Inc., New York; Canadian selling agents, Renouf Publishing Co., Montreal. Third edition, 1916. 885 pages, 262 figures, 6 x 9 ins., cloth. Price, \$5 net. (Reviewed by E. Brydone-Jack, superintending engineer, Manitoba, Saskatchewan and Alberta, Department of Public Works, Canada.)

The third edition of this standard work has been brought up to date by its authors. Much new material on design and tests of reinforced concrete and on beam bridges has been added and the old edition has been largely rewritten and revised, to bring the subject up to date, while the most recent and accepted standard specifications for cement and reinforced concrete are given.

The main features dealt with in this edition may be classified as follows:—

Materials: Classification of cement, Chap. 4; chemistry of cement, Chap. 5; specifications and tests of cement, Chap. 6; tests of aggregates, Chap. 7; voids and other characteristics of concrete aggregates, Chap. 8; cement manufacture, Chap. 31; specifications for reinforced concrete, Chap. 3.

Proportioning of Materials and Strength: Strength and composition of cement mortars, Chap. 9; proportioning concrete, Chap. 10; tables of quantities of materials for concrete and mortar, Chap. 11; strength of plain concrete, Chap. 19.

Workmanship: Elementary outline of the process of concreting, Chap. 2; preparation of materials for concrete, Chap. 12; mixing concrete, Chap. 13; depositing concrete, Chap. 14; laying concrete in freezing weather, Chap. 16.