changes of management for purposes of inaugurating the principles of modern industrial organization into an industry. He states: "The man who undertakes to introduce scientific management and pins his faith to rules, and the use of forms and blanks, without thoroughly comprehending the principles upon which it is based, will fail. Forms and blanks are simply the means to an end. If the end is not kept clearly in mind, the use of these forms and blanks are apt to be detrimental rather than beneficial."

The work goes a long way towards explaining the principles of modern industrial organization and outlines how to utilize the methods of evolution in the introduction of a system of management based upon these principles. The author's experience in the field of labor management extends over 25 years of close practical application and his own special methods are well known, although perhaps partially or imperfectly understood by many. The book outlines to the full his concept of scientific investigation according to standardization, individual instruction, and interconnected reward to both instructor or supervisor and workman.

The illustrations are for the most part in the form of colored charts, representing conditions associated with scientific management in machine shop, metal working, locomotive building plants, etc.

In its entirety the work offers an interpretation of industrial conditions and a promise for betterment that makes it of extreme value to the managers of industry.

Sub-Aqueous Foundations. By Chas. E. Fowler, M. Am. Soc. C.E., M. Can. Soc. C.E., etc. Published by John Wiley & Sons, New York; Canadian selling agents, Renouf Publishing Co., Montreal. 814 pp.; 477 illustrations; size 6 x 9 in.; cloth.

This extensive treatise on Sub-aqueous Foundations is the third edition of Mr. Fowler's work, considerably revised and enlarged. It includes in revised form the material of several previous publications by the author, the cofferdam process for piers, and dredges and dredging. It is a practical treatment of the whole subject containing numerous examples from actual work. This latter characteristic largely constitutes a new matter incorporated in the third edition. They relate to structures that have had the test of time and use. Many of them were constructed by the author or were under his supervision in a consulting capacity.

The use of compressed air in caisson work has been conspicuously added to, while an entire chapter has been devoted to the use of launches, tugs and scows, as required in foundation work. Characteristic of the publication is the data also on the bearing power of soils, on friction in pile and caisson work and on the quarrying of rock. Entirely new matter has been given on piers and wharves; dams, sea walls and retaining walls; dry docks and locks; cost of construction work, the two chapters on this latter subject covering the subject of foundations so well that the engineer in possession of the volume will find it quite adequate as a source of information to properly execute his work.

The following list of chapter headings is sufficient evidence of the comprehensiveness of the book, and engineers familiar with the author's previous contributions to literature on the subject no doubt find therein sufficient new matter to assure them that the book will fill a very important place:

Historical Development; Construction and Practice—Crib Cofferdams; Construction and Practice—Cribs and Canvas; Pile-Driving and Sheet-Piles; Jetting Piles; Construction with Sheet-Piles; Metal Construction; Cylinders and Caissons; Open Dredged Caissons of Timber; Timber Pneumatic Caissons; Steel Pneumatic Caissons, Forth Bridge; Divers and Diving; Removing Old Piers; Pumping and Dredging; Clam-shell Dredges, Drill Scows and Rock Breakers; Dipper and Ladder Dredges; Suction and Hopper Dredges; Tugboats and Scows; The Foundation; Location and Design of Piers; Rock Fill Foundations and Quarries; Calculation of Piers, Footing and Retaining Walls; Cement and Concrete; Foundations for Piers and Wharves; Timber Piers and Timber Preservation; Foundations for Dams, Sea Walls, and Breakwaters; Foundations for Docks and Locks; Forms for Concrete; Estimating the Cost.

Symmetrical Masonry Arches. By Malverd A. Howe, M. Am. Soc. C.E., professor of Civil Engineering, Rose Polytechnic Institute. Published by John Wiley & Sons, New York; Canadian selling agents, Renouf Publishing Co., Montreal. 245 pp.; 35 illustrations; 6 folding drawings; size 6 x 9 in.; cloth. Price, $2.50.

This is the second edition of Professor Howe's treatise on the design of masonry arches according to the elastic theory. Most of the text has been rewritten and a considerable amount of new matter added, while demonstrations of the formulas presented in the previous edition have been materially simplified. The author has employed the unit load method throughout the work, claiming it to be the only satisfactory method to use if maximum stresses are desired.

In order to facilitate a ready solution of the ordinary problems, such as are encountered by the engineer during his regular practice, a greater portion of the book is taken up with the solution of examples, each step being given in detail so as to be readily followed by the engineer or engineering student who has not specialized particularly along this line.

The general subject is treated under the divisions of: Fundamental Formulas; Symmetrical Arches fixed at the ends (2 chapters); Examples showing the application of the formulas; and Typical Arches.

The work relates generally to masonry arches of natural stone, plain concrete and reinforced concrete. Appendices to the general text are as follows: Physical properties of stone and concrete; Data for about 600 arch bridges.

PUBLICATIONS RECEIVED.

Queen Victoria Niagara Falls Park.—28th annual report of the Commissioners (1913). 42 pages; illustrated; size, 6 x 9 in.

Hydro-Electric Power as Applicable to the Farm.—Evidence given before select standing committee on Agriculture and Colonization, Canada.

Experiments with Furnaces for a Hand-Fired Return Tubular Boiler.—Technical Paper No. 34 of the United States Bureau of Mines. 32 pages; size, 6 x 9 in.

Association of Ontario Land Surveyors.—Proceedings of the 22nd annual meeting, held in Toronto, February, 1914. It contains reports of committees, papers, list of members, etc.

Electric Lights for Use About Oil and Gas Wells.—Technical Paper No. 70 of the United States Bureau of Mines outlining danger from use of ordinary electric lights, suggested specifications, etc.

Ontario Good Roads Association.—Proceedings of the 12th annual meeting, appended to the annual report of the