

PUBLIC WATER SUPPLIES, REQUIREMENTS, RESOURCES, AND THE CONSTRUCTION OF WORKS: BY F. E. TURNEAURE, C.E., AND H. L. RUSSELL, PH.D., Professors in the University of Wisconsin. New York: John Wiley and Sons. 1901. xiv + 746 pp. Price, \$5.00

The preface states that the volume is prepared with particular reference to the needs of teachers and students of technical schools; and that the specialist need look for little that is new, although it is hoped that the form in which a large amount of widely scattered information has been presented will prove a convenience to him.

An examination of the book shows it to be by far the most complete treatment of the subject which has yet appeared, resembling in many respects the elaborate German handbooks rather than the earlier American text-books on the subject. Following German precedent is particularly commendable in the very complete and up-to-date bibliography at the end of each chapter.

The study of public water supplies involves not only civil engineering and biology, but chemistry, mechanical engineering, and in fact nearly all the arts and sciences. The treatment of the subject by the authors has been facilitated because they represent respectively the two most important divisions of the subject, namely, civil engineering and biology; and as a result both the engineering and the hygienic sides of the subject have received ample consideration at every point, while the chapter on pumping machinery, which gives a comprehensive idea of the elementary principles involved, was prepared by a specialist, Mr. D. W. Mead, of Chicago.

Without attempting to take up the endless details which constitute so large a part of water supply engineering, but which, for the most part, can only be learned by actual practice, the authors have stated briefly the principles of the art, and have usually given at least an idea of the basis upon which each rests. The completeness with which even the most recent investigations and publications have been noted and used in the preparation of the work is an evidence both of the industry and thoroughness of the authors, and of the rapidity with which the publishers have put the volume through the press.

A work of this character is necessarily based largely upon previously published records, and in using such records the authors

have uniformly given credit to the original authors, which is at once simple justice to them, and a convenience to the student who wishes to know the sources of the various data given. In a few cases translations or abstracts have been referred to as if they were original articles; but this slight failing only emphasizes the general excellence of the work. The book is well printed and freely illustrated throughout.

ALLEN HAZEN.

THE MINERAL INDUSTRY: ITS STATISTICS, TECHNOLOGY AND TRADE IN THE UNITED STATES AND OTHER COUNTRIES, TO THE END OF 1900. FOUNDED AND EDITED BY RICHARD P. ROTHWELL AND COMPLETED BY JOSEPH STRUTHERS, PH.D. Vol. IX. New York and London: The Scientific Publishing Company. xxx+918 pp. Price, \$5.00.

This is the ninth annual volume of a series begun in 1892 and edited by Mr. Rothwell, who died on April 17, 1901. The series has contained information of great interest and value to the metallurgist. The present volume seems to maintain the high standard of excellence reached by those preceding it. Among the special articles contained in this volume, aside from the progress reports, are those on "The Emery Deposits of West Chester County, N. Y.," by E. C. Eckel; "Production of Bromine in Michigan," by A. C. Lane; "Calcium Carbide and Acetylene," by L. K. Böhm; "Clay and its Manufacture into Brick and Tile," by H. Ries; "The Manufacture of Water-gas, with Special Reference to European Conditions," by G. Lunge; "The Utilization of Blast-furnace Gases for the Direct Production of Motive Power," by G. Lgune; "The Utilization of Lignite in Germany," by P. Krusch; "The Raritan Copper Works," by L. Addicks; "Diamondiferous Deposits in the United States," by W. H. Hobbs; "A Report on Iron and Steel Metallurgy at the Paris Exhibition," by H. M. Howe; "Alloys of Iron," by H. Souther; "The Manufacture of White Lead," by P. C. McIlhaney; "A Review of the Tin Industry of the Malay Peninsula," by F. Owen.

During the year the industry increased in value \$147,393,946, reaching the sum of \$1,365,608,583. The total production of iron ore in the United States was 25,917,393 long tons, of pig iron 13,789,242 long tons, and of steel 10,218,572 long tons. This represents about one-third of the world's production. The coal product in 1900 was 52,131,212 metric tons anthracite and 191,256,216 metric tons bituminous, a total of 243,414,163 (including cannel coal), and an increase of 14,696,584 tons over the total for 1899. The total excess of exports over imports was nearly 6,000,000 tons, an increase of about 1,750,000 tons over 1899. Our coal forms now about one-third of the world's production.

Our copper product in 1900 was 600,832,505 lbs., an increase