neers in general and specifically for metallurgists so engaged. It has the points of a good textbook and is eminently suited for postgraduate work.

A. J. LANGHAMMER

Detroit, Michigan

Seventy-five years of progress in the mineral industry (1871-1946). A. B. Parsons. (Ed.) New York: American Institute of Mining and Metallurgical Engineers, 1947. Pp. xii + 817. (Illustrated.) $6.00.

The rising curve of production and scientific development in this country has ascended far above the levels prevailing in May 1871, when the American Institute of Mining and Metallurgical Engineers was founded in Wilkes-Barre, Pennsylvania. Annual mineral production in the United States has increased 10 times during this 75-year period. With only about one-sixteenth of the world's people, the United States now consumes nearly half of the world's mineral output. The heavy drain on the mineral resources of this country during the recent war made the World Conference on Mineral Resources, which was held in celebration of the 75th Founder's Day of the AIME, particularly timely. This is the anniversary volume commemorating this significant event. It is composed of historical papers wherein experts in the fields of mining and metallurgy have reviewed significant developments in mining geology (L. C. Graton), metal mining (Lucie-Eaton), ore dressing (A. F. Taggart), smelting and leaching of ores (F. Leist), iron and steel (C. D. King), nonferrous metallurgy (W. M. Pierce), bituminous coal mining (H. N. Eaverson), anthracite industry (C. Evans, *et al.*), petroleum (E. L. DeGolyer), nonmetallics (Oliver Bowles), and in mineral industry education (T. T. Read). These chapters are not mere rehearsals of historical fact. They are, as the editor, who is executive secretary of the AIME, states, "99 percent fact, with just enough fancy to season it to the taste of the average engineer."

Considering the scientific and industrial developments of the period covered by this volume and the dependence which these have had on mineral raw materials, it is remarkable that this amazing amount of material could be so adequately covered in a single volume, even one of 800 pages. The value of such a volume, however, rests not so much on the quantity of the material presented as it does upon the ability of its authors to sift the significant from the unimportant. In this respect the volume doubtless sets a new high, for probably a more imposing galaxy of authorities could not have been assembled. This comment holds also for the second part of the volume, which contains the proceedings of the World Conference on Mineral Resources. Particularly significant are the articles on "The Mineral Position of the United States," by the Secretary of the Interior, J. A. Krug, "Iron Ore and the Steel Industry" (Charles M. White), "International Aspects of the Petroleum Industry" (Sir William Fraser), "The Future of Gold in World Economy" (P. M. Anderson), "World Coal Resources" (C. Augustus Carlow), "The Role of the Engineer in the Development of Atomic Energy" (P. C. Keith), "Application of Atomic Energy to Industry" (H. A. Winne and B. R. Prentice), and "Metals and Alloys" (Zoy Jeffries), to mention only a few.

The volume is not overburdened with statistics, but in a chapter by E. W. Pehrson, chief of the Mineral Economics Branch, U. S. Bureau of Mines, one finds the entire 75-year statistical record presented in neat, easily digested capsules, each containing one mineral commodity. Pehrson reminds us that in the 75 years covered by this volume total mineral production in this country has increased in value from less than $500,000,000 in 1880 to over $8,500,000,000 in 1945. "In 1870 mineral fuels comprised 38 percent of the total value of all mineral products, metals 52%, and non-metallic minerals 10%." In 1946 the fuels had increased to 64%, metals had decreased to 21%, and nonmetals to 15%.

The World Mineral Conference reports, comprising approximately 50% of the volume, present the most up-to-date review of the international mineral situation available. In the volume, as during the Conference itself, the discussions of atomic power and new sources of gasoline attracted greatest attention. The principles of the nuclear reactor as a source of power are outlined, and a diagram of an atomic power plant is shown (p. 710). The hope of obtaining usable electric power directly from an atomic pile, however, is dispelled. It is concluded that "the atomic energy will appear as heat, which, when converted into steam or hot gas, will feed conventional turbo generators" (p. 714). The use of ". . . atomic power plants for large naval and commercial ocean vessels looks definitely possible, and attractive from the standpoint of making refueling extremely infrequent. This may well be the first real commercial application" (p. 716).

This valuable volume should serve as a reliable reference book for all persons interested in the vast mineral industry. Physically, the volume maintains the same high standard characteristic of all publications of the AIME. Written by more than 25 authors, the volume has remarkable continuity of subject matter. This is a tribute to the editor and his staff.

RUSSELL S. POOR

Alabama Polytechnic Institute

Angewandte Hydraulik. Robert Dubs. Zurich, Switzerland: Rascher Verlag, 1947. Pp. viii + 408. (Illustrated.)

The author, at present professor at the Federal Technical Institute (E.T.H.), Zurich, Switzerland, has set the aim of writing a book which would embrace "possibly all of the hydraulic problems" facing the engineer practicing in the mechanical field. It may be assumed that the book reflects also the character of instruction offered on the subject at the Zurich Polytechnicum.

As a matter of fact, the principal interest of the book for the American reader lies in comparing the manner of approach followed by Prof. Dubs's text with the trends prevailing in American engineering. It has become customary in this country to supply the engineer with a broad knowledge of fundamental principles and facts