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by each branch. During 1944 scientific investigations were undertaken in two principal directions: (1) the development of theoretical and practical methods of physical and chemical analysis of new alloys, the processing of complex multimetal ores, and the study of domestic mineral resources; and (2) investigations relative to the basic chemistry of complex compounds and the development of effective methods for the recovery of rare metals and their alloys. Of special interest to the ceramic industry are the studies undertaken by the Laboratory for Silicates and its reports on the chemical stability of glass and the diffusion of gases in molten glass. A.J.S.

Séailles-Dyckerhoff Alumina Process, Portlandzement Fabrik Dyckerhoff & Söhne at Amoneburg bei Biebrich. F. M. LEA. *BIOS Final Rept.*, 187, Item 22; PB 18,938, 7 pp. (Aug. 1945); abstracted in *Bibliog. Sci. Ind. Repts.*, 1 [22] 1341 (1946). Price photostat $1.00, microfilm 50¢.—This is a report of the process for extracting alumina from coal ashes, based on a discussion with personnel of the Dyckerhoff works and examination of some analytical records. Essentially, the process consists in burning an alumina-containing raw material with limestone; extracting the pulverized material with water by a countercurrent method; precipitating the alumina and lime from this solution by treatment with carbon dioxide, and then subsequently extracting the alumina from the mix of these two solids by treatment with soda. Initially, in the pilot-plant trials, the Séailles water extraction method was used, but it was later abandoned in favor of the alkali extraction method. Details of the process, analysis of the materials, and economic considerations are discussed. The residue from the alkali extraction process proved quite satisfactory for use in Portland cement manufacture.

Synthesis of Fluorine-Mica of the Phlogopite Group; Crystallochemical and Microscopic Investigations of Synthetic Phlogopites; Regular Intergrowth of Synthetic Phlogopite with Hydrous Micas. W. EITEL. *FIAT Final Repts.*, 747, 748, and 749; PB 20,530, 41 pp.; PB 20,531, 32 pp.; PB 20,532, 34 pp. (March 1946); abstracted in *Bibliog. Sci. Ind. Repts.*, 1 [48] 984 (1946). Price (each) photostat $3.00, microfilm 50¢.—This is a series of three reports on synthetic mica research by Eitel and his coworkers at the Kaiser Wilhelm Institute for Silicate Research at Berlin-Dahlem and Ostheim Rhoen, Germany. A process for the production of synthetic micas on a laboratory scale was developed. In PB 20,530, practical details involved in the synthesis are set forth. Potash-magnesia mica and barium mica were made in small crucibles. To produce well-oriented crystals, particular importance was placed on well-regulated temperature gradient in a vertical direction during the first of the cooling period and a magnetic field surrounding the crucible in a horizontal direction. In PB 20,531, the basic crystallographic theories are discussed with complete descriptions of the results of various melts in the phlogopite series. PB 20,532 gives the results of crystallographic studies of synthetic phlogopite, and the rules governing intergrowth of phlogopite and humite crystals are derived. Tables, diagrams, and explanatory photomicrographs.

Synthetic Sapphire and Spinel Production in Germany. M. H. BARNES. *FIAT Final Rept.*, 855; PB 17,545, 17 pp. (1945); abstracted in *Bibliog. Sci. Ind. Repts.*, 1 [20] 1204 (1946). Price photostat $2.00, microfilm 50¢.—Two plants in Germany produced synthetic sapphire and spinel boules during the war, the I. G. Farben plant at Bitterfeld and the Wiedes Karbid Werke at Freyung. Both plants employ the basic Verneuil process, the principles of which are known in the U. S. The details of German apparatus and process are revealed here for the first time. A process for hardening spinel bearings so that their performance approached that of sapphire and so that only one fourth as much diamond was needed for fabrication was developed.

Temperature Interconversion Tables and Melting Points of the Chemical Elements. *Nat. Bur. Standards Misc. Pub.*, M183, April 10, 1947 (supersedes *Misc. Pub.* M126). Price 5¢ from Supt. of Documents, Washington 25, D. C. S.M.L.

X-Rays in Practice. W. T. SPROULL. McGraw-Hill Book Co., Inc., New York, 1946. 615 pp. Price $4.00. Reviewed in *Mech. Eng.*, 69 [2] 165 (1947). F.G.H.

See the following additional abstracts

Sect. XII: Colloid chemistry of the clay mineral attapulgite.

XIV—General

Central Glass and Ceramic Research Institute. ANON. *Jour. Sci. Ind. Research* (India), 4 [7] 387–88 (1946).—The foundation of this Institute in Calcutta is the first of the five national laboratories to be established in India. Cf. *Ceram. Abs.*, 1947, July, p. 151g. M.HA.

Employing an engineer—hiring practices analyzed. JOINT ECONOMIC STATUS COMMITTEE. *Amer. Engr.*, 17 [4] 2, 12–13 (1947).—A preliminary report is given of a survey being made to answer questions which both the employer and the prospective engineering employee ask. The survey includes the type of engineers hired, how young engineers are recruited, how experienced engineers for specific openings are obtained, the most important factors taken into consideration in hiring an engineer, and how much newly employed engineers are paid. The median answer for the last question was found to be $207 per month in a range of approximately $175 to $250; however, the salary depends on the individual in 20% of the industries and upon prevailing wages or special factors in the other 80% of the industries polled. The glass industry was included in the list of those paying the highest wages for recent graduates. In general, the answers to other questions were based on too little data to be conclusive as yet; some trends, however, were indicated. L.R.M.

General business conditions. ANON. *National City Bank Monthly Letter* (June 1947).—The opinion that the peak of the postwar boom has been seen is now fairly general. Where recession has occurred, however, it is still of little weight, so far as the aggregates of production, income, or employment are concerned. The most significant changes that have occurred are in the price trend of basic commodities, the filling up of shortages of more and more consumers' goods, and buyers' resistance to out-of-line prices, including construction. The going will be harder for new or rapidly expanded concerns than it was during the war and the postwar boom. It will be harder for everyone who cannot meet competitive costs. The test of the situation in the coming months will be the state of employment and the output of goods and services to promote the general welfare. R.H.B.

Histology of asbestosis. L. NORO. *Acta Path. Microbiol. Scand.*, 23 [1] 53–59 (1946); abstracted in *Jour. Amer. Med. Assoc.*, 133 [9] 652 (1947). D.G.P.

How to tell your story to workers. ANON. *Modern Ind.*, 13 [5] 44–48 (1947).—The widening gulf between labor and management shows the need for better understanding. That gulf has led to Communism in some countries and to Socialism in others. Thus far it has led only to crippling strikes and generally reduced worker productivity in this country. Communications from management to workers, the smooth flow of information, facts, instructions, and educational material, is today's No. 1 industrial-relations problem. Methods of shaping employee opinion include the following mediums: (1) Supervisory word-of-mouth, (2) bulletin boards, (3) pay-envelope inserts, (4) news letters, (5) employee publications, (6) employee meetings, (7) public-address systems, (8) plant-city advertisements (9) radio, (10) employee handbook, (11) annual statement (12) labor-management activities, and (13) movies. R.H.B.

Influence of age on silicosis. E. MARTIN AND L. ROCHE *Presse méd.*, 54 [Jan. 5] 3 (1946); abstracted in *Jour. Ind Hyg. Toxicol.*, 28 [6] 133–34 (1946). D.G.P.

Lamps and the spectrum. C. E. WEITZ. *Ohio State*

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February 15, 1993

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