Engineering Education.—October, 1916, bulletin of the Society for the Promotion of Engineering Education, Lancaster, Pa. Published under the supervision of F. L. Bishop, University of Pittsburgh, Pittsburgh, Pa.

That Alley of Yours; What Are You Going to Do About It?—A 23-page pamphlet issued by the Portland Cement Association, Chicago, Ill., containing illustrations of concrete alleys in various cities in the United States.

Rescue and Recovery Operations in Mines After Fires and Explosions.—By James W. Paul and H. M. Wolflin. Published by the Bureau of Mines, Department of the Interior, Washington, D.C. Franklin K. Lane, secretary.

Greater Winnipeg Water District.—Report on the aqueduct of the Greater Winnipeg Water District by the special board of consulting engineers—Brigadier-General H. N. Ruttan and J. G. Sullivan, of Winnipeg, and R. S. Lea, Montreal.

Railway Regulation and Locomotor Ataxia.—An address by Frank Trumbull, chairman, Railway Executives' Advisory Committee, before the twenty-third annual convention of the National Hay Association at Cedar Point, Ohio, July 12, 1916.

Coal Mines in Canada.—List of coal mine operators in Canada, arranged according to location of mine, by provinces and districts, to which is added a list of manufacturers of oven coke. Issued by the Department of Mines, Ottawa. Eugene Haanel, Ph.D., director.

Annual Report of the Board of Regents of the Smithsonian Institution, Washington, D.C., (Charles D. Walcott, secretary), showing the operations, expenditures and condition of the institution for the year ending June 30th, 1915. 544 pages, illustrated, 6 x 9 ins., cloth.

CANADIAN SOCIETY OF CIVIL ENGINEERS, ELECTION OF OFFICERS.

After a meeting of the council of the Canadian Society of Civil Engineers, held October 17th in Montreal, the following elections and transfers were announced:—

Associate Members—Donald T. Black, Welland, Ont.; Frederick Clarke, Victoria, B.C.; Arthur S. Clarson, Montreal, Que.; John B. D'Aeth, Montreal, Que.; Sidney C. Ells, Ottawa, Ont.; Charles R. Needs, Sudbury, Ont.

Associate—Charles C. Labrie, Montreal, Que.

Juniors—Horace Beaudoin, Montreal, Que.; Eric E. Wells, Toronto, Ont.

Transferred from Associate Members to Members—Albert H. Aldinger, Detroit, Mich.; William A. Davidson, Coleman, Alta.; William A. Duff, Winnipeg, Man.; Thomas M. Fyshe, Montreal, Que.; Albert C. Garner, Regina, Sask.; John A. Heaman, Winnipeg, Man.

From Junior to Associate Member—James Ferguson, Princeland, Coupar Angus, Scotland.

From Students to Juniors—John E. Caughey, Calgary, Alta.; J. Romeo Gauvreau, Montreal, Que.; F. I. C. Goodman, Montreal, Que.; Hector Grenier, Quebec, Que.; Donald F. MacIsaac, Antigonish, N.S.; Norman Wilson, Ottawa, Ont.

It will cost Australia about $25,000,000 to open the Murray River to navigation and to construct an irrigation system that will develop 1,500,000 acres of land.

STUDIES REGARDING CONCRETE MIXTURES EMPLOYED IN CONSTRUCTION OF SHOAL LAKE AQUEDUCT.

(Continued from page 334.)

which deposited the concrete in the forms while the second specimen was taken from a section half-way between the chutes. A pressure chamber 2 ins. in diameter and 2 ins. deep was made in each block and a 2-in. pipe grouted in above this chamber. Test was made at age of 84 days under 80 lbs. per square inch water pressure. Both specimens were tight.

Three 8-inch test cubes were made up from the materials on one of the contractor's platforms and in the contractor's cement store house. The mixture used was the standard 3 bags of cement to 16 cubic feet of aggregate. The specimens were mixed by hand and mixed to a consistency similar to that used on the work. At 27 days these cubes were tested at the University of Manitoba Laboratory.

Cube No.	Compressive strength in lbs. per sq. in.
1	1,849
2	1,955
3	2,023

These values have been reduced by use of the factor 0.73 to corresponding values for standard test cylinders.

The question of the proper grading of the aggregate for concrete is of more importance to the Canadian engineer than it is to the British or American engineer due to the much higher cost (some 45% to 50% more) of cement in Canada than in the United States or Great Britain. This higher cost of cement means that every effort should be put forward by the members of the society to prevent waste of cement in concrete work. "Concrete-making is essentially work for an expert and not for an ignoramus." This applies to the inspection of the cement, to the grading of the aggregate, to the mixing of the concrete, to the placing of the concrete and to the curing of the concrete. Lack of appreciation of any one factor results in poor work and generally in waste of cement.

PORTAGE AVENUE PAVEMENT, EDMONTON.

Portage Avenue, Edmonton, one of the most important paving jobs in Western Canada, is just about complete. The total length of the avenue is 9,911 feet, the width being 100 feet. The width of roadway is 66 feet, while the sidewalk is 16 feet wide. The street railway track occupies 22 feet 4 inches of the roadway.

The total cost of the work is $415,000, of which $350,000 was spent by the Hudson's Bay Company. There are 55,609 square yards of asphaltic concrete, 17,444 lineal feet of curb and gutter, 249,379 square feet of concrete walk, and 19,544 lineal feet of single track.

The contractors for fifteen blocks of pavement (from 106th to 121st Street) were the Crown Paving Company, while from 101st to 106th Street, the National Paving Company were the contractors. The concrete walks were constructed by Swanson & Kaline. The pavement has a 6-inch base, with 2-inch bituminous surface, and with an additional base of 6 inches under the street railway tracks.

Mr. A. G. Harrison, city commissioner of Edmonton, to whom we are indebted for the above information, states that Portage Avenue is probably the longest and widest paved street of its kind in Canada.