

not care enough for their own lives or the lives of those in their charge to look in either direction to note whether a train was approaching.

We understand that these observations were made at Southern Pacific crossings in California, but that a prominent United States railroad man said that it would be found that these conditions apply wherever a good highway crosses a railroad.

If these figures are true, it is evident that a very extensive campaign of carefulness, or safety education, will have to accompany the good roads movement or else the increase of good roads in Canada will mean a very great increase in the number of fatal accidents.

COMPARATIVE COST OF STERILIZATION BY HYPOCHLORITE AND LIQUID CHLORINE.

Some interesting figures on the comparative cost of sterilization by hypochlorite of lime and liquid chlorine are contained in a paper read a few weeks ago by Mr. M. S. Dutter, before the Illinois section of the American Waterworks Association. The plant from which these figures were obtained was put into operation the latter part of January, 1915. The water supply is taken from a comparatively small stream, and is at all times subject to contamination by sewerage and waste water from coal mines. Two triplex plunger pumps pump the water from a low-lift pump house to the filtration plant, three-quarters of a mile away. The water flows through a weir-box mixing chamber, two coagulating basins, three filter units, and thence to a clear well under the filter house. From this clear well the water flows to another larger clear well, from which the service pumps take their suction. It was at a point between these two clear wells where the application of either liquid chlorine or hypochlorite has been applied. The plant has a capacity of 900,000 gallons per day, and was originally constructed with tanks for applying hypochlorite. In February, 1916, a chlorinator was purchased. Comparing the month of January, 1916, when hypochlorite was used, with June, 1916, when liquid chlorine was used, the following results were obtained:—

	January.	June.
Total pumpage, gals.	10,230,700	8,501,500
Average daily pumpage, gals.	330,000	283,380
Total hypo. used, lbs.	153.2
Total liquid chlorine used, lbs.	12

With hypochlorite at 7 cents per pound and liquid chlorine at 20 cents per pound, the average cost of sterilization by means of hypochlorite was \$1.07 per million gallons of water treated and \$0.28 per million gallons when using liquid chlorine.

The average reduction in bacteria count of daily plates made on nutrient agar incubated at 37° C. for 24 hours was as follows: In January, when hypochlorite was used, the average raw water count was 6,300 and the filtered water count was 15. In June, when liquid chlorine was used, the average raw water count was 7,980 and the filtered water count was 11. In Bacillus coli tests the raw water shows 100 per cent. for both months, while the filtered water shows 1.6 per cent. in January and 0.0 per cent. in June. These results were obtained by means of 1 c.c. samples in all cases. While hypochlorite was used 0.46 p.p.m. of chlorine was applied and while using liquid chlorine 0.22 p.p.m. of chlorine was applied.

PERSONAL.

Sir HENRY EGAN has succeeded the late Sir Henry Bate as chairman of the Ottawa Improvement Commission. JAMES STABLES has been appointed chairman of the Vancouver and Districts Joint Sewerage Board, to succeed FRANK BOWSER, who has retired.

R. E. W. HAGARTY, A.M. Can. Soc. C.E., has been appointed engineer with Messrs. MacFarlane, Pratt & Hanley, engineering constructors, in connection with the construction of a 1,000,000-bushel reinforced concrete elevator at Midland, Ont.

R. D. FEATHERSTONEHAUGH, mining engineer of Edmonton, Alta., who is in charge of the development of the Copper Chief mine near Trout Lake, B.C., was caught in a snowslide recently and narrowly escaped death.

E. B. SKEELS, resident engineer of the Lethbridge, Alta., division of the C.P.R., has severed his connection with the company and leaves shortly for Chicago. It is understood Mr. Skeels will identify himself with some other branch of contracting and engineering than railroad work.

Col. J. D. STEWART, who has performed useful service at the front, and has been placed in command of railway construction work for the Allies in France, has also been promoted to the rank of brigadier-general. He is a well-known Canadian railway contractor and a member of the firm of Foley, Welch & Stewart.

GEORGE BURY, vice-president of the Canadian Pacific Railway Co., is now in London, England. He was a member of the Allied Commission to Russia, which was headed by Lord Milner. After the commission left Russia, Mr. Bury remained there for a month at the request of the Russian Government.

Professor BORIS BAKHMETEFF, who it will be remembered delivered a most instructive address before the Ottawa Branch of the Canadian Society of Civil Engineers last October, on "The Russian Engineer and the War," has been appointed vice-minister of trade and industry in the new Russian government.

C. R. RICHARDS, M.Am.Soc.M.E., formerly professor of mechanical engineering, University of Illinois, Urbana, Ill., and head of the department since 1911, has been appointed Dean of the College of Engineering and Director of the Engineering Experiment Station of the University of Illinois, to succeed Dr. W. F. M. Goss, who has resigned to become president of the Railway Car Manufacturers' Association of New York.

Lieut. CONN. SMYTHE, of the Canadian Field Artillery, has won the Military Cross. He is a son of A. E. S. Smythe, of the editorial staff of the "Toronto World," and was in his fourth year at the School of Practical Science, taking a course in civil engineering, when, in March, 1915, he enlisted as a gunner. In the following July he received his commission and he left Toronto with his battery early in 1916.

OBITUARY.

Lieut.-Col. W. W. STEWART, a prominent architect of Hamilton, Ont., has been killed in action.

GERALD LOMER, president of the firm of Gerald Lomer, Limited, Montreal, passed away very suddenly last week. Mr. Lomer was taken ill at his office and died a few minutes after reaching a hospital. He was born in Brooklyn, N.Y., 67 years ago, but was a resident of Montreal for the past 63 years. He was a member of the Engineers' Club.