

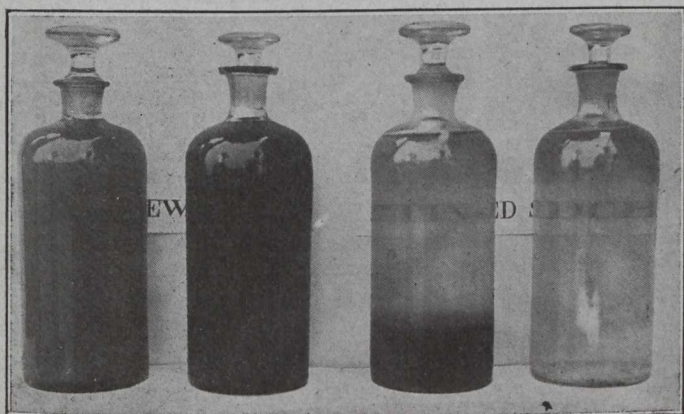
Borough of Brooklyn, and T. Chalkley Hatton, chief engineer, Sewerage Commission, Milwaukee, was appointed for the following purpose:—

First—To prepare standard definitions and other terms relating to the activated sludge process of treating sewage.

Second—To tabulate and distribute a summary of work now being done, or contemplated.

Third—To suggest such correlation of the work being done as may from time to time be desirable.

The foregoing will give some idea of the amount of work which remains to be done and experimentation carried out before we are entitled to claim that we have



Samples Illustrating the Activated Sludge Process, from Continuous Flow Method.

A—Crude sewage; B—Unsettled sample from the activating chamber; C—Sample from the activating chamber settled ten minutes; D—Sample of effluent from continuous flow method.

reached a complete solution of the problems involved in the activated sludge process.

Taking a broad view of the field, it is of much interest to observe the work being done by the many investigators and scientists who are making a study of this method of treating sewage, and the outlook is quite encouraging, the more so as it is seen on every hand that the problems, both scientific and practical, are well recognized and are receiving careful study.

WEEKLY RAILWAY EARNINGS.

The following are the earnings of Canada's transcontinental railways during September:—

Canadian Pacific Railway.				
	1916.	1915.	Increase.	
September 7	..... \$2,679,000	\$2,002,000	+	\$677,000
September 14	..... 2,728,000	2,214,000	+	514,000
September 21	..... 2,779,000	2,408,000	+	371,000
September 30	..... 3,660,000	3,371,000	+	289,000
Grand Trunk Railway.				
September 7	..... \$1,276,061	\$1,091,711	+	\$184,350
September 14	..... 1,263,629	1,054,808	+	208,821
September 21	..... 1,320,277	1,061,047	+	259,288
September 30	..... 1,796,466	1,416,944	+	379,522
Canadian Northern Railway.				
September 7	..... \$ 708,900	\$ 456,500	+	\$252,000
September 14	..... 668,000	590,900	+	77,100
September 21	..... 726,000	654,700	+	71,300
September 30	..... 1,085,000	1,054,900	+	30,100

The Canadian Pacific Railway reports August earnings as follows: Gross earnings, \$13,270,467; working expenses, \$7,802,680; net profits, \$5,467,787.

WHAT FOREST FIRES COST CANADA IN 1916.

ACCORDING to a special bulletin just issued by the Canadian Forestry Association, Canada has lost through forest fires in 1916 over nine million dollars. This equals more than six times what has been spent on forest protection work from coast to coast. The enormous sum wasted through this year's forest fires, most of which were preventable, would add another \$480 to the first year's pension allowances of nearly 19,000 Canadian soldiers.

It is noteworthy that while some parts of the Dominion owe to rainy weather their immunity from fire damage, the season's record proves beyond gainsay that in areas where first-rate fire protection systems were in operation losses of life and property were held down to a remarkable minimum.

Quebec had some heavy fires in the Lake St. John and Saguenay districts, also in the Gaspé peninsula and west of Escalana, on the Transcontinental Railway. It is a striking fact, however, that within the 24,000 square miles of Quebec, covered by the two well-organized associations of limit-holders, the amount of green timber burnt is practically negligible. This immunity was not a matter of luck, but of consistent, patient effort to educate settlers, lumberjacks and others in care with fire, coupled with a system of promptly reporting all outbreaks, and attacking forest fires in their incipency with large forces of men and modern equipment.

British Columbia faced fairly favorable fire conditions through the summer months, and the cost of fire-fighting was reduced by about 75 per cent. over the record of 1915. The number of fires was about half of last year. The British Columbia forest protection service is the most complete in Canada thus far, and the saving of timber is a logical consequence.

A heavy average of rainfall kept fire troubles at arm's length in Alberta, Saskatchewan and Manitoba, and this weather condition was undoubtedly responsible for the escape of the main areas of big timber throughout Ontario. The Claybelt fires at the end of July and first week of August provided a tragic sacrifice of 262 lives and what is estimated to be six million dollars worth of property. There was practically no forest-guarding organization in the fire-swept district except along the railway track.

New Brunswick escaped the risks of 1916 with a very small timber loss, Nova Scotia having a similar experience. The records of the Dominion Railway Board show that the private-owned railway lines of Canada have not been responsible this year for any damaging forest fires. Those that were started were promptly extinguished by railway employees.

Recent estimates show that there are about 400 hydro-electric development plants in Japan.

Tungsten deposits are now being worked experimentally near the banks of the Miramichi River, in New Brunswick. Three veins of ore are reported, one being 26 in. thick. A concentrating plant of 20 tons daily capacity and a crusher have been installed.

American engineers have drawn up details of a plan to dig a canal from the Arctic Ocean through Russia and Finland to the Gulf of Bothnia. The project is reported to be strongly supported in Russia. The proposed canal would run from Kandalaska, on the White Sea, to Tornea, near the Swedish frontier, and would cost 300,000,000 roubles. The total distance would be about 250 miles.