

human progress. The results from intelligent study should be just as profitable now as at any time.

During the last few years business was so active, work so plentiful and money so free that waste occurred and curtailment followed. Until recently the engineer felt secure in his calling. Old methods were good enough. His planning, calculating and estimating were mechanical, so much routine, but to-day a change is taking place. Daily greater skill and more thorough knowledge are required. Men with trained minds find study profitable and necessary. They find, too, that their knowledge must be wide in range, general, and yet particular.

But it is not as a student, no matter how alert or clear-eyed he may be, not as a mathematician, accurate and skilled, but as a man of experience, a man who has "done things," that an engineer will rise professionally.

Experience is an engineer's opportunity. Make no mistake—it is necessary to make a good engineer.

### COST OF PUMPING TORONTO'S WATER SUPPLY.

Special auditors have been checking up the books in several of the departments of the corporation of Toronto. When they handed in their report of the Water-Works Department they attached a statement, the figures of which are used in the following calculations:—

During 1907, 10,356,547,168 gallons of water was pumped for all purposes. This is an average of 28,374,102 gallons per day, or, on the basis of a population of 272,600, it means Toronto supplied 104.3 gallons per capita per day.

The cost per 1,000 gallons was, ordinary charges, 2.60 cents; sinking fund and interest, 2.47 cents, or a total of 5.07 cents per 1,000 gallons.

The gross receipts per 1,000 gallons was 5.26 cents. From meter users it was 10.60 cents per 1,000 gallons and under the flat rate 3.75 cents.

Of the revenue, 42.44 per cent. came from meter users and 57.56 per cent. from ordinary.

A statement of the revenue account of the Waterworks to December 31st, 1907, is given, the receipts being \$544,466.74, and the expenditure, \$269,640.40, the gross revenue excess being \$274,826.34. Interest on outstanding debentures and provision for sinking fund, 1907, \$255,455, making the apparent net revenue excess \$19,370.93.

The net Waterworks debt is shown to be \$5,535,628.50.

### EDITORIAL NOTES.

In Vancouver July proved to be a decidedly active month, the total permits amounting to \$106,080, compared with \$74,010 for June and \$79,195 for May. The great majority of buildings for which permits were issued are dwellings, for which the demand continues unabated.

\* \* \* \*

Edmonton, Toronto and Vancouver show an increase in building operations for July, but Montreal report a falling off of 50 per cent. from the records of July, 1907. One thing worthy of note is that the number of permits is about the same, the falling off being in the class of buildings.

\* \* \* \*

There has been formed in England a "Concrete Institute," which already numbers 225 members, and has the Earl of Plymouth for president, Sir Henry Tanner, vice-president, Max Clarke, F.R.I.B.A., E. O. Sachs, Mr. Ross, M.I.C.E., and other prominent engineers and architects as members. One of its objects is thorough research work in matters appertaining to concrete and reinforced concrete.

The building permits for Edmonton in July, 1908, exceeded the permits for July, 1907, by \$154,110, reaching a total of \$2,094,810. The good crop outlook has had already the effect of inspiring confidence, and never in the history of the city has there been more moderate-priced substantial dwellings in prospect.

\* \* \* \*

The activity of building in the city of Toronto this last month deserves notice. Officials say that the number of new buildings erected in July was 3,562, as compared with only 3,121 in July, 1907; the values in the permits, \$1,219,435, showed only a difference of \$2,000. But the great difference is shown in a comparison of the six months, January 1st to July 3rd. In the first half of 1907 the value of structures erected was \$10,239,330, while this year to end of June it was only \$6,134,245. The change is caused by the altered character of buildings more greatly than by their number.

### PRECIPITATION FOR JULY 1908.

The precipitation during July in Canada was very generally less than the average, and this was particularly the case in the Western Provinces, and especially in Southern Saskatchewan, where the total amount was but 26 per cent. of the average. Marked deficiencies also occurred in New Ontario and Northern New Brunswick. Some few localities in Northern Manitoba, Central Ontario and Southern Nova Scotia reported a slight excess, generally due to thunderstorms of a very local character.

The table shows for sixteen stations, included in the report of the Meteorological Office, Toronto, the total precipitation at these stations for the month.

Ten inches of snow is calculated as being the equivalent of one inch of rain.

Station.	Depth in inches.	Departure from the average of twenty years.
Victoria, B.C. . . . .	0.1	-0.28
Kamloops, B.C. . . . .	0.5	-0.82
Calgary, Alta. . . . .	1.7	-1.01
Edmonton, Alta. . . . .	2.6	-0.87
Swift Current, Sask. . . . .	0.7	-1.87
Qu'Appelle, Sask. . . . .	1.40	-1.27
Winnipeg, Man. . . . .	1.6	-1.52
Port Stanley, Ont. . . . .	3.0	-0.30
Toronto, Ont. . . . .	2.93	-0.07
Parry Sound, Ont. . . . .	2.3	-0.65
Kingston, Ont. . . . .	4.9	+1.85
Ottawa, Ont. . . . .	2.6	-0.95
Montreal, Que. . . . .	4.4	+0.18
Quebec, Que. . . . .	3.3	-0.93
Chatham, N.B. . . . .	1.5	-2.53
Halifax, N.S. . . . .	5.7	+1.85

### RAILROAD EARNINGS.

The following are the latest figures:

	Week ending	1907	1908	Change
C. N. R. . . . .	July 31	\$ 296,900	\$ 227,800	-\$ 69,100
C. P. R. . . . .	July 31	2,282,000	1,990,000	- 292,000
G. T. R. . . . .	July 31	1,307,945	1,112,566	- 195,379
T. & O. . . . .	Aug. 1	25,700	27,500	+ 1,800
Montreal St. . . . .	Aug. 1	72,740	72,341	- 399
Toronto St. . . . .	July 31	65,633	67,074	+ 1,441

### JULY TIMBER RETURNS.

The following are the timber returns for the month of July for British Columbia:—Timber licenses west of the Cascades, 682, \$95,600; timber licenses east of the Cascades, 371, \$42,794; coal prospecting licenses, 25, \$2,500; penalties, \$1,050; transfer fees and miscellaneous, \$917.50; total for month, \$142,861.50.