gineer, Toronto. The author does not maintain that it covers every phase of this interesting question. The experiments made were recorded with a view to gathering information on a particular aspect of this problem, and the results obtained are of considerable value to those interested in the kind of pavements used on city streets.

The most interesting experiment was that in connection with asphalt pavement, where it was found that the results varied not only with the weather conditions, but also with different temperature conditions. It is interesting to notice how the relative position of curves representing tractive resistance change positions under wet and dry weather conditions.

It is to be hoped that these experiments will be continued, as well as other experiments, testing, as far as possible, the foothold the various pavements afford for the horses and the limits of the load that may be drawn on various pavements of varying grades.

EDITORIAL NOTES.

The council of a New Brunswick city have decided that they cannot carry on a certain municipal work because they only received one bid when tenders were called for. During the past few weeks we have received similar information from other municipalities. So many municipalities have got into the habit of advertising in the local papers only. Those informed of the work to be done comprise a very limited circle, and it is only by familiarizing contractors on the outside with the requirements that these municipalities will secure a larger number of tenders and fairer prices.

* * * *

The city engineer of Calgary is to be congratulated upon the promptness with which he resented interference by aldermen in the carrying out of the work of his department. Too many aldermen are anxious to pose as engineers, and their continued interference has disorganized, in some cities, the engineer's department. Mr. Child's action is very refreshing, and if more of our city engineers displayed the same firmness and vigor in dealing with such as interfere in an unwarranted manner, business methods would characterize their departments and the profession would receive more consideration from its clients.

* * * *

The Canadian Clay Products Manufacturers' Association are leading an agitation to secure a course in Ceramics at the University of Toronto. The clay products of Ontario are important, amounting to well over three million dollars annually. No one can doubt the importance of the industry, and all recognize the necessity and value of technically trained men for the different enterprises of this industry. We think, though, that the men anxious to engage in this class of work will be able to secure the necessary training from the courses as now arranged in our provincial institutions. A Ceramic school—then why not a Cement School and a Woodworkers' school? Specialization is very necessary. But the man who first secures a broad, general training will have become familiar with tools which will enable him to make quick progress in his chosen department. Let the highly specialized work be done at the expense of the individual and the industry and not at the expense of the State.

BROKEN RAILS.

The steel rail for steam railways is the most difficult question our railway engineers and rail manufacturers have to deal with. To manufacture a rail that will stand the heavy traffic now going over our roads, and also a rail equally serviceable in all seasons, appears to be a difficult problem.

The chief engineer of the T. and N.O. Railway in his annual report gives a list of 109 broken rails, date of fracture, and also the probable cause of the break. We have tabulated these breaks according to months and probable cause of fracture. The returns for 1908 show that almost seventy-five per cent. of the breaks occur in the winter months, and that fifty per cent. are from causes unknown.

Broken Rails on T. and N.O. Railway.

	Flaws.							
	Split or piped.	Clean* break.	In base.	In web.	In flange.	Shear.	Injury.	
Jan. ..	2	..	..	..	..	2	..	4
Feb. ..	5	19	..	..	..	..	1	25
Mar. ..	3	22	1	2	3	..	1	32
April ..	..	11	..	..	..	1	2	14
May ...	1	1	2	..	..	..	1	5
June ..	..	..	..	..	..	..	2	2
July ...	..	1	..	..	..	..	..	1
Aug. ..	1	..	3	..	..	..	..	4
Sept. ..	..	1	2	..	..	..	..	3
Oct. ...	..	1	5	1	..	..	..	7
Nov. ..	..	6	4	..	..	..	..	10
Dec. ..	..	..	1	1	..	..	..	2
	12	62	18	4	3	3	7	109

* Causes unknown.

TIMBER FOR USE IN MINES.

A method of treatment of timber, known as the Henry Aitken method, is now used at many collieries. In this process the idea is to soak the timber in water, raised to a temperature of from 190 to 200 degrees Fahr., containing enough common salt to form a thoroughly saturated solution.

RAILROAD EARNINGS

Name of Company	For Month of April, 1909	For Month of April, 1908	+ or — *	From Jan. 1st to April 30th, 1909	From Jan. 1st to April 30th, 1908	+ or — ‡
	$	$	$	$	$	$
C.P.R.	6,260 000	5,390 000	+ 870,000	22,281,860	19,238 000	+ 3,043,860
C.N.R.	741,200	686,100	+ 55,100	2,508,700	2,375,200	+ 133,500
G.T.R.	3,142,748	2,976,664	+ 166,084	11,494,097	11,216,514	+ 277,583
T. & N.O.	133,141	65,827	+ 67,314	429,661	222,825	+ 206,866
Mon. St. ..	270,416	259,508	+ 10,908	1 082,346	1.023,010	+ 59,336
Tor. St.....	276,396	254.479	+ 21,917	1.136,961	1,057,046	+ 79,918
London St..	17.881	16.867	+ 1,014	69,328	66,257	+ 3,071
Totals	10 841,782	9.649.445	1 122.307	39.002 956	35.108,852	3,894,104

*Increase or decrease over 1908
‡Aggregate increase or decrease over 1908.

RAILWAY EARNINGS AND STOCK QUOTATIONS

NAME OF COMPANY	Mileage Operated	Capital in Thousands	Par Value	EARNINGS Week of Apr. 30		STOCK QUOTATIONS TORONTO				MONTREAL			
				1909	1908	Price Apr 30 '08	Price Apr. 22 '09	Price Apr. 29 '09	Sales Week End'd Apr 29	Price Apr. 30 '08	Price Apr. 22 '09	Price Apr. 29 '09	Sales Week End'd Apr 29
Canadian Pacific Railway	8,920.6	$150,000	$100	1,814.000	1,463,000	.....	177 175¾	177½	425	156 155½	176¾ 176½	177¼ 177	1436
Canadian Northern Railway	2,986.9	.....	.....	193,600	172,200	.....	.....		.....	.....	.....	.....	.....
*Grand Trunk Railway	3,536	226,000	100	955,171	902,112	.....	*1st. pref. 108¼, 3rd pref. 53¾, ordinary 22½		.....	.....	.....	.....	.....
T. & N. O.	334	(Gov. Road)	.....	40,066	17,685	.....	.....	.....	.....	.....	.....	.....	.....
Montreal Street Railway	138 3	18,000	100	67,753	66,393	.....	.....	.....	.....	181 180	209¼ 209	208¼ 208	217
Toronto Street Railway	114	8,000	100	67,148	63,284	.....	124	.....	91	100 99½	124 123¾	124 123¾	533
Winnipeg Electric	70	6,000	100	.....	.....	143⅜ 143½	170 123	168	92	.....	167¾	167¾	10

* G.T.R. stock is not listed on Canadian Exchanges These prices are quoted on the London Stock Exchange.