Provinit

- recip	nai	ion oi	Snow	Tans	10-M	Real	icea	in In	cnes.	-	
			1	able	XII	[.					
Year 1906 1907 1908 1909 1910 1911 1912	Jan. 12.9 20.7 4.4 6.3 2.5 4.5 3.0	Feb. 2.0 2.7 18.0 6.7 15.8 8.1 1.8	Mar. 5.3 11.1 18.4 24.9 3.0 2.8 2.9	Apr. 9.9 5.0 11.3 7.0 6.4 5.8	May 1.4  0.4 1.6	Sept.  2.3  	Oct. 1.4 4.0  1.4  0.10 5.7	Nov. 14.0 5.5 4.9 8.7 12.7 4.9	Dec. 12.5 1.8 6.1 39.9 18.7 5.9 7.8	Totals 48.1 57.1 59.1 99.2 60.1 34.3 28.0	
Totals Average	54.3 7.75	55.1	68.4 9.77	45.4	3.4	2.3 0.32	12.6	51.8	92.7 13.2	385.9 £ 55.12	
		Snow	Preci	ipitat	ion b	v Se	ason	s.			
1906-7 1907-8 1908-9 1909-10 1910-11 1911-12		73.7—ra 57.1 62.5 78.7 54.8 24-4	in at 1/1	oth		7.37 at 5.71 6.25 7.87 5.48 2.44	t 1/8th		9.2 7.1 7.8 9.8 6.8 3.0	1 3 1 3 5 5 5 -	
Five season: 1906-7 to 1910-11	s`}	351.2 ins. 326.8				35.21 in 32.68	S		43.88 40.85	ins. 5	
				Averag	e 65.36						
		howing	Т	able	XIV						
Rainfall Table I. II. IV. V. VI. VI. VII. VII. IX			No. of Rainfalls Percentage 0.66 0.11 0.052 0.046 0.019 0.019 0.022 0.013 0.011				Intensity of falls Percentage 0.167 0.114 0.078 0.085 0.046 0.053 0.068 0.046 0.046				
X.			0.048				0.298				

and water systems should not fail to provide the necessary means of obtaining such important information.

1.000

1.000

In conclusion, the writer wishes to express indebtedness to Mr. H. C. Cox, of St. John's College, Winnipeg, who supplied the records of the rainfalls, etc., from which the tables have been compiled.

## WINNIPEG'S MUNICIPAL POWER PLANT.

The waterfalls and works of the Winnipeg civic hydroelectric power and light plant are located at Point du Bois, on the Winnipeg River, seventy-seven miles north-east of the city of Winnipeg. The water fall (naturally 32 feet) is increased by the power development dam to 47 feet. The total available power without storage is 60,000 horse-power, which can be increased to 100,000 horse-power. The present installation is 28,000 horse-power, the full capacity of the present building being 45,000 horse-power. The average flow of water is 25,000 cubic feet per second. The transmission line (owned by the city) is 77 miles long and 100 feet wide, upon which is constructed one line of double towers, with transformer station and distributing stations in Winnipeg. The cost of the plant, including power house, dams, wires, forebay, tailrace, intake, rack piers, for full installation, machinery, transmission line, transformer station and distribution stations is \$5,400,000.00. The work of the first year's operation of the plant was entirely satisfactory. The cost of domestic lighting has been reduced seventy per cent., and that of power proportionately, and the plant is already paying its way, the revenue monthly covering the cost of interest, operating expenses, depreciation, advertising and other expenses.

The city of Hamilton is contemplating the purchase of a large gravel pit near Guelph. The gravel contained therein has been found to be well suited for use in civic construction, and if the city acquires it, the understanding is that a stone crusher will be installed and a railway switch run into it for immediate use.

## AN UNUSUAL ENGINEERING OPERATION.

The accompanying illustration has been sent in by Mr. E. Bennett, a Toronto contractor, and relates to an incident described in *The Canadian Engineer* September 5th, 1912, in which issue an article appeared relating to the destruction of an arch span at Oakville, Ontario.



Readers are referred to the article. The illustration herewith is descriptive of the method of dynamiting and shows the position and simultaneous explosion by electric spark of the shots placed in the crown and near the haunches of the arch.

## AMERICAN ROAD CONGRESS.

Systematizing the purchase of all road materials and equipment through the establishment of purchasing departments, somewhat along the lines followed by great railroad corporations, is strongly advocated by Maj. Henry G. Shirley, Chief Engineer of the Maryland State Roads Commission, in a paper which he will present at the third American Road Congress, which will be in session at Detroit, Mich., during the week of September 29. An intelligent selection of material and equipment, exact knowledge of values and prices and utilization of discounts and credits are among the advantages claimed for a centralized system for the purchase of road materials and equipment.

The construction and maintenance of concrete roads, a type which is attracting attention among road builders, will be explained in a paper by Mr. F. F. Rogers, State Highway Commissioner of Michigan, and the discussion on his paper will be opened by Mr. A. N. Johnson, State Highway Engineer of Illinois. A similar treatment will be given the subject of brick roads by Mr. J. M. McCleary, County Engineer of Cuyahoga County, of which Cleveland is the county seat and which has a large mileage of excellent brick roads, the discussion to be opened by Mr. R. Keith Compton, chairman of the Paving Commission of Baltimore.

Tars, oils and asphalts in connection with the construction and maintenance of roads have been so generally used in the eastern states as to bring out much valuable data. The basic paper on this subject will be presented by Mr. S. D. Foster, Chief Engineer of the Pennsylvania State Highway Department. The discussion will be opened by W. A. McLean, Chief Engineer of the Province of Ontario, Canada.

The lessons learned at the International Road Congress recently held in London will be presented at the big meeting in Detroit by Col. Wm. D. Sohier, chairman of the Massachusetts State Highway Commission.

There will be a host of other papers and addresses which will deal searchingly with every phase of the road subject from the standpoint of the engineer, the financier, the legislator and the road user.