



The
**CANADIAN
 COURIER**
The National Weekly



Vol. XX.

September 9th, 1916

No. 15

WINNIPEG'S \$13,500,000 WELL

With a Broad-Gauge Railway Alongside that Cost \$1,300,000 More

GETTING into Winnipeg by the C. N. R. By AUGUSTUS BRIDLE Mayor Deacon was a man of action. Once the

about seven p.m., the visitor observes from the train-window a strange-looking train that seems to be heading nowhere in particular. It has three coaches behind a plug-ugly engine, the last of which is inscribed, Greater Winnipeg Water District. Having heard of prohibition, you at once conceive the idea that the demand for water has suddenly become so great that the city fathers are hauling it in by trainloads from somewhere to augment the artesian wells.

But that is a mere illusion. What that train actually is you do not discover until, like the writer, you are invited to travel on it with a first-class cold package lunch from Eaton's thrust into your lap and a whole day to go sight-seeing, some of the time by the aid of gasoline torches and lanterns at a temperature of 45 degrees underground. Which is the main reason why this story of a well and a well-hook is written.

High up among the engineering exploits and the economic utilities of North America must be reckoned the Greater Winnipeg Aqueduct, which, so far as we know, has but one rival of its kind on this continent, the famous Catskills waterway that provides New York with good water. The G. W. A. is not so huge as the Catskills tube, but it is within a mile or two of the same length. It is being built to reach a total distance of slightly under 100 miles, between the city mains and head of water at an arm of Shoal Lake near the borders of Ontario; its maximum height is nine feet; maximum width, ten feet. It is built to supply a peak load of 85,000,000 gallons a day. It is estimated to cost \$13,500,000. It called into being a broad gauge railway the length of the aqueduct proper, that cost \$1,300,000 more. The project was set on foot three years ago. It will not be finished for probably two years more. Meanwhile Winnipeg and five adjacent municipalities are able to boast that nowhere else in the world are 225,000, or even five times that many people, building a well that costs anything like thirteen and a half million dollars, including the well-hook, but not the bucket.

A fairly good percentage of the average populace of Winnipeg are dimly aware that such a stupendous system of waterway is under construction, and within a few millions of what it is scheduled to cost. A very small percentage of those who know most about it sometimes venture to say that in view of this, that and the other unforeseen in 1913, it would have been better to stick to the artesian wells. But the great majority of those who understand the project economically and financially have no more doubt of the sound economics of the G. W. A. than they have of the ultimate defeat of Germany or the philosophy of gravitation.

ANY pessimizing person had better ask Mayor James Waugh what he thinks about the scheme of the Winnipeg well. Of course it happens that Mayor Waugh is the Chairman of the Aqueduct Commissioners. But if James Waugh were only an ordinary tax-paying booster he would be just as keen for the aqueduct as he is now. It is very doubtful if any of the leading business, manufacturing or financial men of Winnipeg have the slightest doubt that the aqueduct is necessary whatever it costs up to ten millions or so. And at the time the by-law was passed by the ratepayers to spend for better water enough money to build at least 500 miles of prairie

railway, not more than ten per cent. of the ratepayers cared enough one way or the other to register their votes.

But that was at a time when population was building a greater Winnipeg by hundreds in a week, and when the average citizen was too busy with land and other increments to worry about what aldermen and controllers and engineers took a notion to spend on public utilities. Winnipeg was too big to be parsimonious. If Winnipeg wanted better water than the artesian wells could supply, let her have it. If the Winnipeg of to-day didn't need it, the city of tomorrow would. It would have been the same if the city fathers proposed to furnish better light, heat and power or cheaper coal, or improved transportation facilities. The need for all these things was self-evident. The determination to let the powers elected get them on behalf of the people was magnificent.

However, there were, and are, good, economic reasons why the city of wheat should invest millions in better water. In the first place, the old system of artesian wells in vogue for about thirty years past is becoming doubtful. More and more wells are constantly being sunk. The depth now is over 120 feet, compared to about 20 feet in the beginning. Not even a rust-prophet could predict when this invisible underground system of springs would play out and leave the greatest city west of Toronto at the mercy of a filtered Assiniboine. And that's no hygienic elysium. But suppose the supply is inexhaustible, there is a chronic objection to the kind of water that comes from the sub-terrain of Winnipeg. Chemically it is pure enough; contains no bacteria, is clear and cold, and for the most part perfectly wholesome. But it is as hard as liquid iron filings. Ask the householders of Winnipeg and they will testify that kettles and steam-pipes and water pipes clog up with some sort of calcareous formation almost as fast as the frost gathers on the windows in zero weather. This may be a trifle exaggerated as to speed, but it conveys the idea. Winnipeg water is so "hard" that it wears out plumbing and clothes and people's tempers at a wicked pace. It boosts the sale of Monkey Brand soap and all the other preparations that mollify hard water. It goes fiendishly after the interiors of steam boilers and runs up the price of locally generated power. It enriches the plumber and the supply man at the expense of the public, which is always a grievance. And it is so desperate an enemy of locomotive boilers that the C. P. R. made a present of \$200,000 to the Greater Winnipeg Aqueduct Association if they would guarantee them good soft water for the boilers that tank up so lavishly at that junction of great railways.

With such reasons to back them up, the Mayor and controllers and council of 1913 plunged into the scheme of building the great well. The one man who first promoted the scheme was Mr. T. R. Deacon, then Mayor, former city engineer, mining engineer and superintendent of construction on the North Bay waterworks; a man that had a great deal to do with bridge iron and other industrial matters, had a summer home somewhere on the Lake of the Woods, and when he got back to town after his summer holidays had a good deal of hard things to say about the difference between Lake of the Woods water and the water of Winnipeg.

idea got hold of him that a hundred miles from Winnipeg City Hall there was an inexhaustible reservoir of good water absolutely uncontaminated by sewerage, he began to think about how to get it into Winnipeg. In this connection one tries to imagine an average Toronto man in any public office scheming how to get good water from even as near by as Lake Simcoe, let alone having faith enough in the absolute economy of good water to run the bucket into Lake Ontario far enough out to be free of the Toronto and Hamilton sewerage that backs up with an east wind. This particular brand of economic imagination in regard to waterworks might be just as absent in a number of other Canadian cities. To all those that have problems of this sort the bold-as-brass tactics of Mayor Deacon in proposing, in 1913, to dump an arm of the Lake of the Woods into Winnipeg for all time to come are worth studying.

It was in June, 1913, that three New York engineers came up on the invitation of Mayor Deacon and his colleagues to investigate the problem of making an underground river from Shoal Lake to the city of wheat. It is to be presumed that there were no Canadian engineers capable of making such a survey. Anyway some of these men had already been identified with the Catskills aqueduct that supplies New York and probably had the very kind of experience that Winnipeg needed in the search for water.

THEREAFTER began pilgrimages of engineers to the Lake of the Woods area. The problem was in many ways simple enough. The difficulties had to do with absolute knowledge of purity of the water, with the gravity system and with financing. It would have been a joke of the ages if Winnipeg had undertaken to spend thirteen millions on getting germinated water. Chemical analyses were undertaken in a laboratory up at the Indian School. The report states: "The chemical analysis show that it is well suited for boiler and manufacturing purposes."

But people can't drink water that is merely good enough for boilers and manufacturing. Microscopic tests were made every other day for a period of two months. The total number of little organisms per cubic centimetre was discovered to be an average of 833, which is no more than normal. Any excess over this could easily be removed by filtration.

And the water was found to be smooth and soft. So far as quality was concerned the quest for water was successful. One obstacle remained on this score. Falcon River discharged into Indian Bay, which was the arm of Shoal Lake selected. Falcon River was brown with humus from the drainage of muskegs that reached back for miles along the route of the proposed aqueduct in a sort of no-man's land. It was necessary to get rid of the Falcon. The proposal was to build a dam and divert the Falcon, sending its waters on a fifteen-mile hike in the sunshine round by Snowshoe Bay before it was cleansed by sunlight and ozone and got back into Indian Bay again. That was done.

But that gets ahead of the story. Quality guaranteed—what about quantity? Shoal Lake level might be seriously lowered by an 85,000,000 per diem flow to Winnipeg. All available tests of efflux from Lake Superior and Lake of the Woods were dug up. Result—that a foot depth of Shoal Lake is found to be enough to furnish 85,000,000 gallons a day for a period of 8.5 months. That is, without any rain