

radium to a substance he calls radiopher, which can be made cheaply. It can be injected under the skin and in other parts of the body, and is said to possess all the qualities of the original radium.

The Canadian Copper Company will erect a customs smelter for the treatment of ores at Copper Cliff at a cost of \$75,000. The smelter will be ready for business by October 1. The Copper Company has a water power at High Falls, 25 miles distant from Copper Cliff, and is establishing a plant there for the transmission of power to Copper Cliff, expending \$750,000.

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## PERSONAL.

J. E. Dalrymple has been appointed general freight agent of the Grand Trunk Railway, with headquarters at Montreal, and John Pullen, assistant freight traffic manager.

Archie Glassco, of the Dominion Bridge Company, a graduate of McGill, and a native of Hamilton, has been appointed bridge engineer of the Grand Trunk Pacific, with headquarters at Montreal.

The governors of Dalhousie College, Halifax, have appointed E. B. Jack now with a Roanoke, Virginia, bridge company, to take the chair of civil engineering vacated by the resignation of Professor Dixon, who goes to Manchester University.

It is understood on the best authority that J. C. Sullivan, divisional engineer of construction for the Canadian Pacific Railway, with headquarters at Winnipeg, has been engaged as one of the expert engineers on the construction of the Panama Canal for the United States Government.

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## RAILWAY NOTES.

The C.P.R. will build a new station at Guelph, Ont., at a cost of \$40,000.

Jas McDiarmid, contractor, Winnipeg, has begun work on the new \$20,000 station for the C.P.R. at Medicine Hat.

The Michigan Central Railway have appropriated \$100,000 for improvements in their shops and equipment at St. Thomas.

Surveys are being made for an electric railway from Peterborough to Young's Point, a distance of fourteen miles. The company will purchase its right-of-way.

The Guelph and Goderich Railway Co. are ready to call for tenders for twelve stations along the line. The contract which comprises \$150,000 worth of buildings, will be awarded to one contractor.

The contract for the erection of a depot and office building for the Canadian Northern Railway at Winnipeg has been awarded to Winnipeg firms. Work has already commenced on the building.

The city council of Chatham, Ont., has appointed a railway committee, composed of Ald. Austin, Marshall, Edmondson, King, and Potter, to look after steam and electric railway matters for the city.

The Hill Electric Switch Co., Limited, of Montreal, has just received contracts for the construction of switchboards for the Canadian Pacific Railway at Brandon, Man., and the Valleyfield Electric Light Co., at Valleyfield, P.Q.

One fully equipped box car every 25 minutes, and one new engine ready for the road every seven days is the rate at which the C.P.R. Angus shops are preparing that road to handle the western wheat crop. The cars are of the most modern description, capable of carrying upwards of 700 bushels of wheat, while the engines are the most powerful known.

The National Construction Company has entered into a contract with the Grand Trunk Pacific Railway Co. to build their line from Winnipeg to the Pacific ocean as well as the branch line from Fort William to Lake Superior Junction. This corporation is composed of leading capitalists and railway men. All the tenders now being asked for will be addressed to the National Construction Co.

The C.P.R. have decided to gradually replace all their main line wooden bridges with steel, along the Pacific division. A step in this direction has just been taken in the letting of contracts to the British Columbia General Contract Company for the replacing of the wooden piers of the company's main line bridge across the Pitt River with concrete piers.

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## EDUCATIONAL.

The University of Wisconsin, College of Mechanics and Engineering, Madison, Wis., U.S.A., has just issued bulletin 121, which describes the courses in Chemical and Gas Engineering, which have recently been adopted.

The Canadian Correspondence College, 161 Bay St., Toronto, Canada, has five distinct and separate courses in Electrical work. Viz.:—Electrical Engineering; Electric Lighting; Telegraphy; Telephone Practice; and a course for Electric Railway men. It also has a course in Machine Design and Mechanical Drawing.

The Grand Rapids School of Mechanical Drawing, 361, 362, 363 Houseman Building, Grand Rapids, Mich., U.S.A., gives a comprehensive description of its courses in Geometrical and Mechanical Drawing as taught by mail in an illustrated booklet which it publishes, and which will be mailed on request.

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## TELEGRAPH AND TELEPHONE

The city council of Guelph has renewed the franchise of the Bell Telephone Company for five years.

The ratepayers of Dauphin, Man., have unanimously endorsed the principle of municipal ownership of the telephone system, and the council will at once proceed to raise the money by debentures to install the same. The Bell Company is already on the ground, which means that Dauphin is to have two telephone systems.

A new telephone line is to be constructed between Bancroft, Coe Hill, St. Ola, Trenton, Madoc, Marmora, Belleville, Bird's Creek, and Maynooth, to connect with a large number of places north of the C.P.R. in Hastings County. The people, it is said, tried in vain to have a line built by the Bell Company. Some of the merchants, therefore, formed a company of their own, and are now building an up-to-date line. The principal residents interested are Messrs. Clarke, Sargent, and Green.

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## MUNICIPAL WORKS, ETC.

The waterworks system of St. Boniface, Man., will be extended at a cost of \$40,000.

At Palmerston a by-law to raise \$3,000 to improve the town's electric light plant carried.

The municipality of Stanley, Man., has made arrangements to drain 19,000 acres of land at a cost of about \$9,000.

At St. Mary's a by-law for \$15,000 for the extension of the waterworks and electric light system was voted on and carried.

Perth town council has passed a by-law providing for the issue of debentures to the amount of \$20,000 to complete the sewerage system in that place.

The town of Moosomin, N.W.T., has decided upon a drainage and sewerage system. A waterworks scheme is also under consideration.

At Listowel a by-law to borrow upon debentures the sum of \$16,000 for the purpose of constructing permanent steel and concrete bridges on Bismarck, Wallace, Main, and Elma streets, was defeated.

The town of Chatham is considering spending about \$35,000 on the enlargement of its electric light plant. This is in accordance with the recommendations of an expert from Montreal who has gone over the property.