

## MUNICIPAL WORKS, ETC.

Carroll, Man., is to have a new \$6,000 bridge.

Almonte will spend \$7,000 on granolithic sidewalks this year.

Kingston has eight miles of granolithic walks and Brockville thirteen.

Listowel has authorized the borrowing of \$10,000 to complete the waterworks, \$21,000 raised by last year's by-law being insufficient.

Peter Lyall & Son, of Montreal, have been awarded the contract for the new Ottawa University buildings, the steel wharf sheds at Montreal, and the C.P.R. station and hotel at Winnipeg.

Barrie will issue debentures for the following improvements: Extending cement pavements, \$10,000; extending water works system, \$3,000; enlarging fire hall, \$3,500; purchase of hose, \$1,500.

An official report of the Department of Bridges and Roads in France shows the continuance of good results in rendering roads free from dust by coating the surface with tar. This was tried after the unsuccessful use of a mixture of oil and petroleum. The engineer says: In La Cher two lengths of the Chaussée Nationale were coated with tar in June and August of 1902. Both these experiments have been entirely successful, the road now being covered with an elastic skin, while the sound of foot-passengers' tread is muffled and horses and draught oxen require only one-half the effort they put forth before. The noise and vibration caused by vehicular traffic is much reduced, and neither dust nor mud is formed on the tarred surface.

Montreal is having considerable difficulty in connection with the drainage of St. Denis ward, and the northern portions of the city. When the city established a sewage farm and a drainage system leading from it to the Back river, two or three years ago, it was supposed a work had been done which would last for years, but the original plans were altered, so that the surface water, as well as sewage, should pass through the farm. The city surveyor pointed out at the time that this was a mistake, as the farm would be unable to filter such a quantity of water, and it would become flooded and choked. So it has turned out, and the courts have forbidden the use of the farm and drains, as they were creating a nuisance. A report on the means to be employed to overcome the difficulty has been prepared by the city surveyor's department, several alterations being suggested, but before deciding on any one, the municipalities of St. Louis and Outremont, which are specially affected, are to be consulted.

C. H. Rust, Toronto city engineer, recently explained to the Provincial Board of Health the three systems of sewage disposal which he suggests as feasible, with the object of eliciting an authoritative expression of opinion as to the most suitable. Scheme 1 is the carrying of the crude sewage to an outlet in the lake, nine miles east of the waterworks intake pipe. This would cost \$1,750,000, with an annual cost, without interest, of \$17,000. Scheme 2 is to convey the sewage of Woodbine Ave., treat it by septic tanks and pump the effluent to a sandy farm of 700 acres, north of Danforth Ave. This would cost \$2,400,000, and its maintenance would be \$76,000. Scheme 3 is to supply septic tanks and bacteria beds on Ashbridge's Marsh, and turn the effluent into the lake. This would cost \$2,500,000, and the maintenance would be \$37,000. Personally, the Engineer favors scheme No. 1, but it is opposed by Dr. Sheard, Medical Health Officer. Mr. Rust's next choice would be scheme No. 2, the sewage farm plan, although it would be a most expensive one. The other scheme, the placing of septic tanks on Ashbridge's Marsh, would cause a great deal of objection by people residing in the vicinity. Dr. Sheard said he could not approve of turning the crude sewage into the lake. The prevailing winds would be easterly, and would drive the sewage towards the waterworks intake, besides polluting the shore near the sewage outlet. In his opinion the sewage should be treated by septic tanks. He insisted on a pure effluent, no matter what the cost of the system adopted. The matter was referred to the Sewage Disposal Committee of the Board.

A by-law to raise \$10,000 to extend the waterworks and electric light plants has been defeated in Strathroy.

A party has left Vancouver to commence the Alaska boundary survey. The work is expected to extend over three years.

Winnipeg will purchase a water tower and an aerial ladder, increase the apparatus at the halls, and build a new fire hall at a cost of \$17,000.

The Maritime Contracting and Mining Co. has the contract for the Springhill, N.S., waterworks. The reservoir will be built on the summit of Cobequid Mountain, about seven miles from Springhill. The system will cost in the vicinity of \$100,000.

The Canada Foundry Company was awarded the contract for the new steel conduit across the bay at Toronto. Its tender was \$14.96 per lineal foot, or 48 cents in advance of the offer made by the Pittsburg firm of James McNeil & Co. The distance is nearly 6,000 feet.

Motor water carts, each carrying 1,100 gallons, have proved successful in Paris. The sprinkling apparatus is connected with the wheels so that water is delivered at a rate corresponding to the speed of the cart, and stops when the cart comes to a standstill.

The Dominion Government will erect such fortifications in the harbor of St. John, N.B., as will enable the port to defend itself against attack from the sea. The chief battery will be built this season upon the highest ground of Partridge Island, which may necessitate changing the site of the present lighthouse. Lord Dundonald is anxious also to have batteries erected to protect the harbor of Vancouver, B.C.

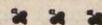
The Canadian Fire Underwriters' Association declare that extensive improvements are required in the Montreal waterworks. The pumping capacity is ten millions of gallons short per day. A fifteen million gallon steam plant for low level is urged; new boilers to take the place of three which have been condemned; two six million gallon pumps at high level, one for service and one in reserve; six more steam fire engines, one of 1,300 and five of 1,000 gallons; additional hose, extension ladders, trucks, chemical engines, hydrants, signal boxes and extended water mains.

The Ontario Public Works Department has purchased from a Hamilton firm five road-grading machines. Two will be placed in the Parry Sound district, one in Algoma, one in Thunder Bay, and one in the Rainy River district. In the past all the colonization roads have been made with pick and shovel, and it is expected that with the graders not only will the work be more cheaply done, but also more satisfactorily. During the past winter about 60 miles of road were cleared in the Temiskaming district, the work of stumping with dynamite has commenced, and this will be immediately followed by the graders.



## TORONTO ENGINEERS' CLUB.

Two meetings of the Toronto Engineers' Club were held in May. On the 12th, Henry Wiederhold, of Philadelphia, read a paper on "Rock and Mastic Asphalts," and on the 26th, A. G. Christie read one on "Steam Turbine Testing at the Westinghouse Works, Pittsburg, Penn." Both were illustrated by lantern slides, and were of a technical character, but full of interest to engineers.



—The Egyptian Government has given the firm of Sir William Arrol & Co., the builders of the Forth and Tay bridges, the contract for the construction of three bridges across the Nile, near Cairo, at a cost of about £200,000. Thirty-four tenders in all were sent in from Great Britain, France, Germany, Italy, America, Switzerland and Belgium. Hitherto, owing to the high tenders made by British firms, the chief contracts in Egypt have gone to French firms. Two of the new bridges will be comparatively small, being 600 yards long and 65 feet broad. The French firm of MM. Daye & Pillet, which closely competed, has been awarded the work of constructing two railway bridges in the Delta.