

Charles Mason; carpenter work, Oliver Micaud.—Residence for Mr. Evans at Sillery; Emile Cole, contractor, cost \$2,200. Contracts have been let as follows for extension to the convent of the Sisters of Charity, cost about \$20,000: Jean Turgeon, masonry; Jos. Gosselin, joiner's work. David Ouellet is architect.—Amedee Roy is building a cottage 42 x 28 feet, for Gaudias Richard, St. George street; cost \$1,500.

TORONTO, ONT.—Mr. F. H. Herbert, architect, has awarded the following contracts: New factory, Liberty street, for Messrs. John Lee & Company—masonry, Henry Lucas; carpenter work, J. C. Scott; plumbing, Bennett & Wright Co.; ironwork, St. Lawrence Foundry Co.; painting, H. W. Johnston; galvanized iron work, Metallic Roofing Co.; roofing, Rennie & Son; concreting, A. Gardner & Co. New residence, St. George street, for T. W. Horn—carpenter work, James C. Scott; other trades not let.—W. Mashinter & Co. have been awarded contract for hot water heating in residence for James Black, Palmerston ave., and for remodelling the plumbing in 10 Madison ave. for S. F. McKinnon.

MONTREAL, QUE.—The tender of A. Paquette & Co. has been accepted for alterations to factory on St. Dominique street, for Fogarty estate, from plans by W. E. Doran, architect.—Contracts for two houses on La-gauchetiere street for Michael Stuart have been let as below: Masonry and brickwork, M. Giroux; carpentry and joinery, M. Scott; other contracts not let. W. E. Doran, architect.

SHERBROOKE, QUE.—J. Verret, architect, has in hand the following works: R. C. church of St. Hermenegilde de Barford, in stone, cost \$19,000; Paquet & Godbout, contractors; church of St. Vincent de Hereford, in wood, cost \$8,000, Octave Blain, contractor; church of St. Charles Borromeo de Garthby, cost \$12,000, Paquet & Godbout, contractors; church of St. Adolphe de Dudswell, cost \$9,000, Cleophas Poulet, contractor; church of Notre Dame de Lourdes, cost \$3,500; church at St. Cecile de Whitton, cost \$6,000 (plans in course of preparation); church of St. Jacques le Majeur, cost \$10,000; alterations to the Hochelaga Bank, Sherbrooke.

OTTAWA, ONT.—The following tenders have been recommended for acceptance for building the First Avenue public school: Alex. Garvoek, brick and stone work, excavation and concrete work, \$9,441; Hugh Gilmour, carpenter and joiner work, \$5,925; M. Howe, painting and glazing, \$937; McKinley & Northwood, plumbing work, \$425; McKinley & Northwood, boiler and brickwork, \$520; McKinley & Northwood, steam heating apparatus, \$949; McKinley & Northwood, galvanized iron work and ceilings, \$1,787; F. Hunt, lathing and plastering, \$500.—The following tenders were received by the government for the work on the Kockliffe rifle range: John J. Lyons, \$10,222; John O'Toole, \$10,631; Michael O'Leary, \$10,883; C. E. McDougall, \$11,068; James White, \$11,830; Michael Tobin and J. F. Keating, \$12,609; George Stockand, \$13,955; Paquet & Godbout, \$15,230; James O'Connor, \$15,605; W. A. Archer, \$17,698; M. A. Piggott, \$19,232; Patrick Burns, \$21,230; John O'Leary, \$25,201. The tender of J. J. Lyons has been accepted.

LONDON, ONT.—Laying conduit to Springbank, 2,100 feet; James M. Drummond, contractor, \$1,900. The Hospital Building Committee has recommended the acceptance of the following tenders for building the new Victoria Hospital: Carpenter work, John Pardom, \$23,295; brickwork, Martyn & Hammett, \$27,495; painting and glazing, Pace & Fitzgerald, \$2,280; plastering, Pritchett & Murray Bros., \$4,170. Tenders for heating and plumbing were not asked. The building of the children's hospital will also be recommended, by the same contractors, at a cost of \$3,301. The tenders received were as follows, the latter tender in each case being for the children's hospital: Brickwork—William Hayman, \$27,618.80 and \$1,785; Martyn & Hammett, \$27,495 and \$1,735; John Hayman & Sons, \$28,200 and \$1,900; Simpson & Murray, \$35,500 and \$3,000; Everett & Sing, \$27,857 and \$1,877; Moran & Ridge, \$33,679 and \$1,840; J. Garratt, \$30,000 and \$2,500; Jas. S. Luney, \$33,104 and \$1,895. Carpentering, galvanized iron work and slating—Win. Tytler, \$25,275 and \$2,090; Isaac Sargent, \$26,298, including children's pavilion, or \$25,871 if it be not built; John Shopland, \$23,530 and

\$1,270; John Pardom, \$25,495, \$23,295, exclusive of children's pavilion; Jones Bros., \$25,150 and \$1,550; Tambling & Jones, \$23,355 and \$1,400 (bulk tender \$57,680, children's pavilion \$3,490). Painting and glazing—H. & C. Colerick, \$2,750 and \$200; I. Quick, \$3,100 and \$97; Geo. Howe, \$2,520 and \$130; Pace & Fitzgerald, \$2,280 and \$36. Plastering—Gould Bros., \$4,945 and \$195; John Fenn, \$5,750; Pritchett & Murray Bros., \$4,170 and \$257; Gould & Stratford, \$4,025 and \$200; Robt. Gash, \$4,625; Geo. Slade, \$6,434.

THE PROPER CARE OF WATERSHEDS.

In a recent lecture before the Franklin Institute of Philadelphia, Prof. W. P. Mason, of the Rensselaer Institute at Troy, N. Y., spoke of sanitary problems in connection with municipal water supplies, from which the following extracts are taken:

Everybody is talking or writing about water; but the public is far from being well posted. Ocular evidence of purity is popularly sufficient. The bright and limpid water from the well which drains a graveyard is quite satisfactory to those who would shudder over a cholera ship's touching at our most distant port. The \$5,000 just voted at Albany, N. Y., for studying the bubonic plague were better expended towards getting a pure water supply for that city.

A letter written me says: "Water taken midway between the surface and bottom of a river will always be found as pure as fresh spring water. Impurities on the surface will be blown ashore in a few hours, while those heavier than the water will sink to the bottom."

Highly-desirable as it would be to keep the waters of our great rivers in potable purity, the enormous expense would be prohibitory, apart from the consideration of great injustice to established institutions. Large centres of population now in existence turn their sewage directly into the river on whose banks they stand, and an up-stream city might well complain should it be forced at great expense to establish sewage disposal plants when the town below for much less money could secure purer water from some inland source.

A land should be looked upon as watered by its smaller lakes, its springs and brooks, and sewered by its great streams—especially by its navigable rivers. Its water sources should be protected by law with exceeding care, and no river or stream should be added to its list of drains except after proper consideration by a state board of health, followed by legislative permission.

The typhoid fever outbreak at Plymouth, Pa., showed the direct relation between epidemic disease and a polluted water supply. It was traced to a single typhoid patient whose dejecta were thrown out upon the snow upon a hillside at whose base ran the stream

supplying the town. The dejecta were frozen solid for weeks; but the March thaws dissolved and carried them into the stream below. Pruden long since showed that typhoid bacillus can survive three months' continuous freezing; while a more recent authority finds germ life standing the temperature of liquid oxygen, 298 degrees below zero, Fahrenheit.

The Massachusetts State board of health, by a series of experiments at Lawrence, has determined that through intermittent filtration with beds of gravel or sand, city sewerage may be converted into potable water.

On many a farm, and within the limits of many a town, human dejecta are disposed of in a vault of cesspool, and the purifying power of the earth depended upon to prevent pollution of the family well or of the adjacent stream. The distance from cesspool to well is often so short that the intervening soil has not the capacity to eliminate the amount of filth present, even by a process which must be essentially a continuous rather than an intermittent form of filtration. An elaborate series of analyses of the earth in the immediate vicinity of a cesspool showed that pollution extended to at least fifty feet from the cesspool.

In New York state the occurrence of typhoid fever cases in country, as compared with city, have been in the ratio of thirty-three to twenty-four. The average annual death rates for thirteen Massachusetts cities stand, before introduction of public water supply, 79.04 per 100,000, after such introduction, 38.03. For the whole state of Connecticut, the percentage of typhoid deaths to total deaths had fallen from 5.08 in 1870 to 1.84 in 1893. Such figures show the advantage of selected water supplies over the general run of those derived from the domestic well.

(To be Continued)

ARTIFICIAL STONE WALKS.

The following extract, taken from Road Commissioner Campbell's recent address in Orillia, may interest municipal authorities: "Planks are not an economical material for sidewalks. Timber subjected to alternate moisture from the ground and rain, and heat from the sun, cannot help but decay rapidly. A plank walk properly constructed will last five years, then repairs commence. At the end of fifteen years the walk has cost as much for repairs as it cost in the first place, therefore the average life of a plank walk may be seven years. The best material for sidewalks is artificial stone, such as is laid in front of the Sheppard block on Mississauga and Peter streets. The first cost of this is nearly three times that of plank. Plank averages about 5c. square foot; artificial stone, 12c. square foot. The latter, when properly laid, will last probably for a century; it has been on some Toronto streets now for thirty years, and is apparently as good as ever."

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