

Extensive alterations are being made in the steamer "Greyhound" at St. Catharines, Ont. The steamer "Lakeside" is expected to commence running from St. Catharines to Toronto about the 15th inst.

Two semi-annual dividends of 3 per cent. each, amounting together to \$104,400 were paid by the Richelien & Ontario Navigation Co. during the financial year just closed, leaving the amount of \$7,627.55 to be carried to the surplus.

J. L. Booth, Ottawa, stated recently that he would, during the coming season, build sixteen hundred feet more of dockage at Depot Harbor, for the further accommodation of grain to be shipped over the Ottawa, Arnprior & Parry Sound Railway.

Maine, U.S., shipyards are turning out five-masted schooners, and there are no less than four five-masters building in the Maine shipyards at present. The "Nathaniel Palmer," just launched at Bath, Me, is 205 feet long, 44-4 feet beam, 22 feet deep and 2,440 tons gross.

Collingwood Schreiber, Deputy Minister of Railways, has stated that M. P. Davis, contractor for the Gallops Canal, had been granted an extension of time to 1900 to complete his contract, but he will be obliged to provide tugs to tow vessels up stream, there being a sufficient depth of water, but a strong current. The Soulanges Canal contractors have been given to May 15th next to complete their work. There is, however, no certainty that they will be through in that time.

## Personal

T. A. S. Hay, C.E., has been appointed city engineer in Peterborough, Ont.

Geo. White Fraser, D.L.S., Toronto, is engaged on the survey of the boundary between British Columbia and the Yukon district.

We recently had a visit from J. B. Moore, representing the Ashcroft Mfg. Co., the Consolidated Safety Valve Co., the Hayden & Derby Mfg. Co.

Jenkins Bros., valves and packing, the famous New York and Boston house, is now represented in Canada by H. C. White, who is just now making the round of the trade.

Wm. Butterick was accidentally killed in Deseronto, Ont., February 6th, at the Standard Chemical Works, by being caught in a shaft. His father is superintendent of the Rathbun Co.'s lumber mill.

Hugh Ryan, the contractor who built the Sault Ste. Marie canal, and in the earlier days a large section of the G.T.R., died in Toronto, February 13th, leaving an estate of almost one and a half millions of dollars.

D. C. Smith, who travels in Canada for Henry G. Thompson & Son, New Haven, Conn., U.S.A., has recently visited Toronto in the interest of that firm's famous hack saws, and hand, power and jig sawing machines for cutting metal.

It is reported that Mr. Louis Coste, chief engineer of the Public Works Department of Canada, has forwarded his resignation to the Minister of Public Works. His purpose is understood to be to take the management of the Dominion Yukon Mining Company.

George C. Morrison, Hamilton, Ont., died recently at his home. Mr. Morrison was a native of Kirkcubright, Scotland, but came to this country when a very young man. About 34 or 35 years ago he came from Galt to be foreman in Beckett's Engine Works, and 30 years ago he went into business for himself, starting the engine and boiler works which he has ever since carried on in Hamilton.

## FIRES OF THE MONTH.

Jan. 31st. American Bent Chair Co., Owen Sound, Ont., loss, \$150,000.—Feb. 7th. The Columbia River Lumber Co.'s (Vancouver) sawmill at Moberly.—Feb. 11th. Dunn's sawmill, Sault Ste. Marie, Ont.; loss, \$5,000.—Feb. 12th. L.E. & D.R.R. Co. round-house, Sarnia, Ont.—Feb. 13th. The Geo. Gillies Co.'s bolt works, Gananoque, Ont.; \$12,000 damages.—Feb. 13th. A large portion of Digby, Ont., was burned down.—Feb. 14th. Wm. Law & Co.'s wharf, Yarmouth, N.S.—Feb. 14th. J. Saunders' wood-working and blacksmith shop, Sunderland, Ont.; loss, \$1,000.

## A NOVEL METHOD OF SEWAGE DISPOSAL, ESPECIALLY DESIGNED FOR THE CITY OF TORONTO.

(Concluded from January issue).

In the foregoing, the lift from the pump well to the filtration area, recommended by Mr. Rust, has been assumed to be only 70 feet vertically. This is not correct, the elevation being much greater, as I am now reliably informed. So much so, indeed, as to bring the annual cost of maintenance by my combined method, up to \$100,000 or more. This, in view of the much more economical second alternative plan, is almost prohibitive. The artificial filters referred to may now be considered as offering the better method of subsidiary, and final purification. The long, narrow spit of land between Ashbridge's Bay and Lake Ontario presents an excellent location for the small area required, and can be reached by gravity within a moderate distance from the coke and combustion works, should local circumstances prevent their location in close proximity to the latter.

The half acre of coke and six acres of sand and gravel filters already mentioned, would be sufficient, as at Reading and Glasgow, but, inasmuch as coke would require frequent renewal, and the other materials are to be had in abundance in the locality designated, it would be more economical to lay out 8 or 10 acres of sand and gravel beds at a maximum cost of, say \$40,000. The probability is that quite sufficient material is on the spot *in situ*, and that the filters, on a much more extensive scale, and at very much less cost, could be made out of the sand.

The total cost of the whole plant, including coke and combustion works on the line of the outfall sewer, the filtration area, and a possible mile of conduit pipe from the works to the filter beds, would be, approximately, as follows:

Coke and combustion works.....	\$191,200
Land for above .....	10,000
Conduit pipe .....	40,000
Filter beds .....	40,000
Cost of land, right of way, etc.....	25,000
	\$306,200

The artificial beds at Reading, Penn., U.S.A., cover an area of 57-100 acre, only, they filter 1,500,000 gallons of sewage effluent daily, and the preliminary coke straining of the "entire" crude sewage is by no means as thorough as it should be, the strainers being changed but once a week, and yet the effluent from these very small filters is satisfactory. In this case (Toronto), the heavy matters of the sewage are entirely held back from the coke strainers, there is constant aeration, and, with a larger filtration area, proportionately, can we not look for even better results?

No sludge, a minimized cost of construction, and a yearly cost for maintenance not exceeding \$73,000, which covers the care of the filter beds.

The construction of half an acre of coke filter at the works (at the discharge end of the pumps), would add greatly to the purity of the effluent from the sand and gravel filters at Ashbridge's Bay, and be well worth the outlay. Such a filter would cost about \$15,000, and bring the total outlay for construction up to \$321,200. It would probably suffice to renew such a filter at the rate of, say ten tons daily, which, as the coke from the strainers in the receiving reservoirs, would be utilized as fuel, and pay for itself.

The fact that bricks are more or less magnetic in their properties has been recently demonstrated by H. E. Lawrence of the Physics Laboratory of Rochester University, Rochester, N.Y.; the investigation is still proceeding, and we will give details of the experiments when they have been completed. The magnetic instruments in the Observatory at Toronto are housed in a structure in which no brick was used, and the director states that they have had no trouble of the kind which led to the discoveries at Rochester.

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