NEW INCINERATOR AT BERLIN, ONT.

T Berlin, Ont., there has just been completed a garbage and refuse incinerator that differs in design from most of the other incinerators that have been constructed in Canada.

It is a two-cell incinerator, of 25 tons daily capacity. These cells are operated separately, each cell having its own water and ash pit, oil burner, grate, drying hearth, baffle wall, flue, feeding holes, valve-controlled hot air blast, oxygen duct, pyrometer coupling, pressure gauge dampers and doors.

The walls are built of 9-inch fire brick with 1-inch asbestos insulated material between the fire brick and the common brick. The arch is built of 2-inch fire brick, 1inch insulating material and 1-inch air space. There is a 13-inch thickness of common brick between each cell. The furnaces are so built that each cell can be relined from the inside without disturbing the exterior walls or roof, or without interfering with the operation of the adjoining cells or plant.

The drying hearth upon which all garbage and refuse falls slopes towards the fire grates, and is in a direct line with the heat from the grates on its way to the combustion chamber flue. At this point all combustible material is destroyed by the flames passing through the garbage, and the wet material is dried. When dry, this material is raked onto the fire grates.

A pull-down door is situated in the centre of the clinker door, and is used for stoking the fire, and pulling down the dried material. A large clinker door gives easy access to the entire grate area for clinkering, and is of the guillotine type, opened by counterbalanced weights.

A motor-driven suction fan draws through the ducts any foul air, smoke, and dust arising from the charging floor, furnaces or clinkering and ash passage. This air is then carried to a regenerator, where it is heated by waste gases passing on their way to the stack, and is then conducted to the ash pits under the grates.

The combustion chamber is designed for the combustion of all gases, the collection of dust, and so that the gases will get on increased rolling motion for the proper mixing of the gases. A temperature of 1,400° F. is maintained in the combustion chamber.

At the end of the combustion chamber, the animal chamber is located. The carcass is lowered by mechanical device onto the cross arch, which is especially designed to keep the carcass suspended, allowing the heated gases to pass around on all sides, and preventing the animal from dropping down into the dust. An oil burner is here affixed for the purpose of accelerating the rapidity of consumption of the carcasses when a number are brought in at a time, in cases of epidemics or stable fires, or when the furnaces are not in operation.

A second combustion chamber, or fume consumer, is built just beyond the flue from boiler and by-pass from animal chamber. After the heated gases leave either of the two flues, they rise over a bridge wall specially constructed with chequered holes. The second combustion chamber is beyond the bridge wall and is so designed as to again increase the rolling motion and the mixing of the gases. Here, again, fresh, heated oxygen and hydrogen are admitted to accelerate the combustion of any gases that may escape from the main combustion chamber, or gases that emanate from the carcass.

The contract for the incinerator was awarded to the Ideal Incinerator and Contracting Company, Limited, of Toronto, and the incinerator was designed and constructed by that company.

SEWAGE PUMPING PLANTS.

The following notes relating to sewage pumping plants in a few Canadian cities are from the "Municipal Journal":—

Edmonton pumps part of its sewage against a 5^o foot head, using a duplicate installation of motor-driven centrifugal pumps controlled automatically by float. The plant has given very little trouble; is visited by a sewer maintenance man once a day.

Hamilton pumps a portion of its sewage, about 9,470,000 gallons, against a maximum head of 22 feet, using centrifugal pumps with 6-inch to 10-inch discharge operated by direct acting steam engines and Canadian Westinghouse motors of 75 h.p. The sewage passes through bar screens with one-inch clear space. The plant is operated by eight men, whose wages amount to \$7,000 a year. The city proposes to install this year another plant with a capacity of six million gallons per day against a 40-foot head.

Stratford pumps all its sewage, 900,000 gallons, against a 17-foot head, using an 8-inch Canadian Foundry turbine pump, 750 r.p.m., operated by a 10-h.p., 220-volt, 3-phase, 25-cycle induction motor, started and stopped automatically. Sewage first passes through septic tanks and screens. The plant is operated by one man. Annual cost of operation, \$700.

Toronto pumps about 40 per cent. of its sewage, nine million Imperial gallons, against an 18-foot head, using two vertical centrifugal pumps with a capacity of 12 cubic feet per second each, and one with a capacity of 36 cubic feet per second, operated by 3-phase, 25-cycle, variable speed, vertical motors, two of 75 h.p. and one of 200 h.p. Sewage passes through screens with ¹/₂-inch bars and ¹/₂-inch spaces, which are cleaned automatically. The plant is operated by six men in 8-hour shifts. Annual cost of operation, \$16,000.

Vancouver uses two temporary and one permanent installation with a capacity of 620 gallons per minute for a 25-foot lift. The permanent installation consists of Yeomans vertical submerged 3-inch and 6-inch pumps operated by 3-phase, 60-cycle, 220-volt motors, which are stopped and started automatically by a Cutler-Hammer switch. Sewage reaching small pump is screened, that for larger pump is not. One man on full time looks after the three plants. Annual cost of operation, about \$3,000.

RAILWAY BUILDING IN ALBERTA.

Hon. A. L. Sifton, Premier of Alberta, outlined in the Legislature last week the railway policy of the province for the present year. According to it a loan estimated at \$2,000,000 will be made to the Canada Central Railway. The exact amount is not to be more than 80 per cent. of the cost of the line from McLellan, on the Edmonton, Dunvegan and British Columbia Railway, to Peace River Crossing. Another resolution calls for additional guarantees for the Canadian Northern Western from \$13,000 per mile to \$18,000 per mile on the Oliver-St. Paul de Metis line north-east of Edmonton, and the third gives a bond guarantee of \$20,000 a mile for a 60-mile extension of the Edmonton, Dunvegan and British Columbia line, to tap the Grande Prairie country.