removed by pickers and deposited in bins, the remainder passing by means of the same conveyor to and over the incinerator, where it automatically dumps into a hopper and chute to the furnace.

Between the receiving floor and the incinerator room there is a baling room equipped with a motor driven baling machine in which the paper of various classes will be baled.

In connection with the incinerator there is installed a 150 h.p. water tube boiler through which the combustion gases from the furnace pass, and thence to the stack.

The power for motor driven conveyors and baling machines and for lighting the plant is purchased from a local electric lighting company at 2¼ cents per kilowatt hour, and the steam produced has been contracted for by the same company at the rate of 10 cents per 1,000 lbs. per hour.

As this is a new and as yet untried plant there are no cost statistics to be reported.

Westmount Destructor.—Westmount is a municipal corporation which serves as the residential section of Montreal and has a population of about 16,000. The rubbish of this section is destroyed in a destructor plant which is under the charge of Geo. W. Thompson, who is also general superintendent of the light and power department of the municipality.

This plant is essentially a municipal electric lighting plant designed for commercial and public lighting purposes and erected as a protest against the exorbitant rates for lighting charged to the citizens and the municipality by the local electric light and power company. The destructor plant is an auxiliary enterprise operated in the same building, the steam generated in the destruction of refuse being used in the production of electrical energy.

The complete installation includes one 50-ton Meldrum destructor, one 50-ton Heenan & Froude destructor, five water tube boilers with an aggregate capacity of 1,000 h.p., and four engine-driven electric generators with an aggregate capacity of 1,000 kw.

The destructor plant burns garbage, rubbish and screened household ash. By screening the ash a combustible much higher in heating value is obtained, but at the expense of cleanliness, power and attendance.

There is a common collection of ashes, rubbish and garbage by the city, but when no garbage or rubbish is collected by a cart the ashes are passed through a screen. Carts drive up to the receiving or upper floor and dump their contents, which is then raked into storage bins or hoppers over the destructors. The refuse is pulled down and out of these hoppers into furnaces which are of the same type as those described in the Milwaukee plant, with the exception that clinker is handled by a car which travels on an overhead rail to a clinker yard. The clinker is used by the road department in concrete and road work and any not so used is sold to contractors.

The report for twelve months ending October 31, 1910, shows a total revenue from electric lighting and destructor plants of $102,149.17 and a total cost of operation of the combined plants of $75,426.38, leaving a net profit of $26,722.79. In the operating expenses are included interest on bonds, sinking fund for retirement of bonds and a most liberal reserve for a plant depreciation. The electric plant is charged with the heat furnished from refuse consumed. The destructor plant is credited with heat sold to electric plant, clinkers sold to private contractors, and garbage destroyed, the last item charged against the Department of Health—$9,449.06 last year.

The combined plants are ably administered under the immediate direction of Superintendent Thompson and they afford a striking example of the possibilities in a municipal enterprise of this sort when conducted with the same skill and keen business acumen that characterize successful commercial undertakings of the same magnitude. The plants are entirely free from political influence and the superintendent is empowered to engage and discharge employees, and is held strictly accountable for results

The garbage plant is free from odors and there has never been a complaint made against it, although it is situated in a strictly residential community.

West New Brighton Destructor.—The plant at West New Brighton, Richmond Borough, New York City, at the present time consumes approximately 25 tons of refuse per day at a cost of $1.34 per ton, which does not include fixed charges.

All of the power used is produced from the steam generated by the destructor gases and no sale of clinker is allowed. The plant will operate with improved economy when the quantity of garbage handled reaches a point reasonably near its rated capacity. Protests were made against its erection by householders in the neighborhood, but no complaints have been received by the department since the plant was put in operation.

Another plant of the same make and capacity, but with improved devices for feeding and clinker ejection, is being installed by the same borough at Clifton.

Scranton's Crematories.—The Scranton, Pa., plant consists of four garbage crematories of the F. P. Smith design and was installed by Lewis and Kitchen. It is designed to handle garbage and light combustible matter. Its rated capacity is 50 tons, but at times it has disposed of 90 tons per day. Combustion is at comparatively low temperature and is incomplete. No records have been kept of the temperatures and from our observations and comparison with incinerating and destructor plants we believe that the temperature in the combustion chamber is commonly below 1,250 degrees Fahr., the temperature at which garbage must be burned for the complete elimination of noxious vapors.

The plant is favored by its location next to a packing plant, the odors from which are at times highly objectionable, and on account of this circumstance any odors emanating from the crematory pass unnoticed.

The plant is inherently defective and changes have been made in its construction which increased its capacity for disposing of garbage without in any way improving its destruction from a sanitary standpoint.

Comparison of Methods.—As to refuse disposal, the authors considered dumping, the reduction system, the cremation system, incineration and the destructor system. Dumping they considered out of the question for Newark, since almost the only land available was the meadows, which would involve long hauls; moreover, as they are considered to be the future site of industrial establishments any fill made there should be such as would improve the value of the property and not depreciate it from a sanitary standpoint. "Dumps include putrescible matter, which in the heat of summer produce noxious odors and seriously interfere with the rights of adjoining property holders."

The reduction system is well adapted to cities where comparatively little or no coal is used as a household fuel and consequently where the difficulties in the way of a proper separation of household refuse are the least; but under the contract system it is always necessary to provide a bonus to induce the investment of private capital in the enterprise, and if undertaken as a municipal service it involves the installation of an equipment much more costly than for incineration or destruction and of a highly complex character.

Furthermore, the successful operation of a reduction plant is dependent upon a very efficient technical administra-