A duplicate generating plant for 200 4-ampere magnetite street lamps is now being installed in a building adjacent to the garbage plant; also a 150 h.p. water tube boiler. Such surplus steam as the garbage plant develops over and above that required by the buildings mentioned will be used by the electric plant, but the water tube boiler will be the main source of supply for the electric plant.

The garbage plant consists of two 125-ton units, but the commissioner of health informed us that its actual capacity was 300 tons per day. At the present time they are burning about 120 tons of garbage per day of 24 hours, using between two and three tons of coal per day.

The total cost of the plant was $64,000, but allowance should be made for the fact that a large portion of the labor was supplied by inmates of the workhouse.

The cost for collection of ashes, rubbish and garbage is $1.31 per ton. The cost of disposal of garbage is $0.78 per ton, which is reduced to a net cost of $0.56 per ton by crediting plant with the heat and light furnished to the city institutions before mentioned at the rate of 6 mills per h.p. for heat and 2 cents per kw. hour for light.

Milwaukee Destructor.—The records of the cost of operation of the destructor plant are not in such condition as to warrant their use as a basis for comparison, but from the 1911 data available in the office of the director of public works we found the average cost per ton of the destruction of the garbage to be $1.44 and the cost of mixed garbage and ashes to be $0.99 per ton. This includes the cost of 400 tons of coal used during five months of the year when the percentage of green garbage was high and it was necessary to use additional fuel.

These figures should not, in justice to the plant, be accepted, for the reason that the number of employees at the present time is far in excess of the actual requirements. From our inspection we are convinced that it would be properly and sufficiently manned with two-thirds the force employed at present.

The condition of the plant is excellent, the garbage is destroyed at temperatures between 1,400 degrees and 1,800 degrees Fahr., without odor, and all of the power used about the plant is obtained from steam generated by it in boilers through which the furnace gases pass on their way to stack.

The clinkers are now being used to fill up the lake front and are very valuable for this purpose, being hard and vitreous, absolutely sanitary and superior in every way to household ash. However, on account of a demand for their use in concrete construction it is proposed to install a crusher and screen and to dispose of the ground clinker by sale to contractors at $0.75 per cubic yard. A conservative estimate of the value of the by-products of destruction at this plant is $54,000 per year—$48,000 in steam produced and $6,000 in clinker sold.

Chicago Disposal.—The city of Chicago is at present disposing of its garbage under a contract which expires in December, 1913. The ashes are being dumped along the lake front. The common council has appointed a committee to investigate the general subject of disposal plants, but the commissioner of public works recommends the continuance of the present system in order to make park land along the lake front.

For the year 1911 it cost the city of Chicago $3.80 per ton to collect and dispose of its garbage, there being included in this cost the contract price of $48,000 per year paid to a private reduction plant. It also costs them $0.50 per cubic yard to collect and dispose of their ashes and rubbish.

Cleveland and Reduction Plant.—The reduction plant at Cleveland, O., is that next described. This was purchased by the city from a private company in 1905 for $87,500, the plant having a capacity of 100 tons per day. The city has since erected additional buildings and equipment increasing the capacity to 240 tons a day.

The plant was not well designed initially and it has been impossible to improve conditions by subsequent additions, the original buildings consisting of cheap sheet iron enclosures and the arrangement of equipment not conducive to economical handling. In spite of these handicaps and except for a period during a change of political administration, the operation of the plant including the collection department has been so well organized and supervised by an official with high ideals of public service as to show in 1907 a lower cost of collection and disposal than by contract in 1905, with a considerable increase in the amount of garbage handled.

The processes of reduction are, in general, similar to those employed in the Columbus plant and the local conditions which are controlling factors in the selection of the the method of refuse disposal are also similar, natural gas being used as fuel by householders and coal costing $1.85 per ton.

One of the principal ash and rubbish dumps was found to be on fire in several places.

Buffalo Reduction and Utilization.—In Buffalo, N.Y., the refuse is collected in three separate classes—ashes, garbage and rubbish—which the householders are required to place in separate cans. Ashes are carted to the dumps, garbage to a private reduction plant and all other refuse to a refuse utilization plant owned and operated by the city. The city contracts all of the collections and the reduction of garbage.

In 1907 the city purchased the utilization plant from a private corporation for $50,000. It consists of a brick building 200 x 50 feet and contained when purchased a destructor of the Meldrum type, with boiler through which the furnace gasses were passed and which produced the power required in plant operations. Since that time two boilers have been added and a sewage pumping plant. There is now being installed a destructor of the Heenan & Froude type.

The rubbish is unloaded on a receiving floor and raked into an inclined conveying apron which conveys it to a sorting room where girl pickers remove all salable material and place it in bins, the remainder passing through to the feeding floor over the destructor furnaces. This rubbish is dry or wet according to the condition when placed in the can by the householder or to the weather conditions during transportation to plant. The salable rubbish consists of paper, charcoal sacks, bags, rags, tin cans, metal and bottles. The tin cans are loaded in cars and sold to detinning companies and machinery has been installed for converting the cans into nailing caps. Bottles are sorted and sold to breweries and blueing companies, metal to dealers and old shoes sold for burnishing and polishing castings. The plant is also credited with 70 cents per hour for steam supplied to the sewage pumping stations. The girl pickers work for $1 per day of eight hours.

The report of the Bureau of Streets for the year ending June 30, 1910, shows charges for operation of plant, including interest and repairs and also some new equipment, of $38,530.60, and receipts from the sale of rubbish of $40,653.02, or a profit for the year of $2,122.42.

Rochester Incinerator.—At Rochester, N.Y., an incinerator plant has recently been installed by the Decarie Incinerator Company for the city and was undergoing its initial test at the time of the visit of Messrs. Hallock and Runyon.

This plant is of 60 tons capacity and is representative of the largest and most improved form of incinerator designed by this company. It is intended to handle rubbish only and is equipped with inclined conveyor from receiving floor to sorting room, where the various salable rubbish is