

The Canadian Engineer

An Engineering Weekly

REFUSE DISPOSAL PLANTS

Prior to preparing the report on the disposal of the refuse of Newark, N.J., the engineers who prepared that report—J. C. Hallock, deputy chief engineer of the Department of Public Works, and F. O. Runyon, consulting engineer—made personal inspection of ten disposal plants of various types in order to determine their merits from an economic and sanitary standpoint. The plants visited were those at Minneapolis, Minn., Milwaukee, Wis., Chicago, Ill., Columbus, O., Cleveland, O., Buffalo, N.Y., Rochester, N.Y., Westmount, Can., Richmond Borough, New York, City, and Scranton, Pa. The conditions found at these several cities were described in the report, which descriptions as abstracted by the Municipal Journal of New York are given below.

Minneapolis Incinerator.—Minneapolis has especially attracted the attention of sanitarians because of the fact that Commissioner of Health Dr. P. M. Hall has trained the householders to drain the garbage and wrap it in paper before depositing it in the can. The special virtue of this method of handling garbage by the householder lies in the reduction of the fly nuisance, a cleaner garbage can and the insurance of a good proportion of combustible matter, in the form of paper, for the incinerating plant. The latter point is a detriment rather than a benefit where the destructor type of plant is in use, as it prevents a proper mixture of rubbish and ashes with the garbage for the better distribution of moisture throughout the mass.

During the month of January, 1912, the city collection department composed of one inspector and 31 drivers gathered 841 loads of garbage and 2,298 loads of ashes. The capacity of the garbage wagons is 100 cubic feet each with a "struck" load, but in practice the wagons are heaped so that their actual capacity is at least 33 per cent. in excess of this figure, or approximately 5 cubic yards. The ash wagon is the common type of bottom dump wagon of about $3\frac{1}{2}$ cubic yards capacity.

All wagons are supplied by the city and each driver is paid \$100 per month for his services and that of his team. Each driver is assigned a district and held strictly accountable for the removal of ashes and garbage therein and is not required to work according to a schedule of hours per day. His duties consist in the maintaining of a clean district and not in the rendering of a given number of hours' work per day. He is, however, required to make at least one collection of mixed ashes and rubbish and one of garbage from each household in his district each week.

The garbage is collected in metal bodies mounted on wheels or runners according to the season and is delivered at a transfer station about one mile from the centre of the business district, which is also the approximate centre of population. The mixed ashes and rubbish are carted to the low lying spots of the city, whether these be streets or vacant lots. The commissioner of health believes that within

a few years there will be no more available dumping grounds within the city and that when this time is reached some other method of ash and rubbish disposal must be found.

The city ordinance authorizing and directing the commissioner of health to collect and dispose of garbage throughout the city and to take charge of and operate the city's crematory says in part "that the commissioner of health, in his discretion, may require the owners and proprietors of hotels, boarding houses, restaurants, commission houses, stores and markets, at their own expense, to collect and remove their own garbage and waste material and to convey the same to said garbage crematory or dispose of the same in such manner as shall be approved by the commissioner of health."

As having a bearing upon the method of collection and disposal of garbage in Minneapolis it might be noted that even here, where the householders more generally conform to the requirements for a complete separation of garbage from ashes and under the supervision of a highly efficient commissioner of health, our inspection of their largest dump disclosed a large flock of starlings feeding on all too evident garbage, proving conclusively that a perfect separation of these two classes of refuse is still to be realized.

The transfer station is on a siding of the Sault Ste Marie Railroad, where the metal bodies of the garbage vehicles are loaded by a traveling crane onto flat cars, twelve bodies to the car, with total average weight of 36 tons per car. From the transfer station the cars are taken to the incinerating plant, which is located about four miles from the centre of the business district of the city. At the plant a traveling crane picks up one body at a time and conveys same into the building, where a special motor on a crane tilts the body, discharging the contents into a hopper opening directly over an incinerator of the Decarie type. This plant was erected by the city about twelve years ago, before the organization of the Decarie Incinerator Company, but following the original designs of the inventor with modifications developed by the present commissioner of health. This type of plant is one in which the garbage is burned on an upper grate over a grate upon which coal is used in starting and at other times as may be necessary, the garbage gradually falling upon the lower grate and being there consumed.

In this plant the gases from the furnace pass over into what is commonly termed a Dutch oven, in which coal is continually burned and the function of which is to raise the temperature of the furnace gases, destroy germ life and remove noxious vapors. From this oven the gases are made to pass through a vertical fire tube boiler and thence through an induced draft equipment to the stack. The steam generated in this boiler is used for supplying a 50 kw. direct current lighting unit and for heating a medium sized work-house, a tuberculosis hospital and a green house.