A District Sanitary Disposal Plant*

A Model Collection and Disposal System for City Waste Material

By Flora Spiegelburg

In order to make the Model District a *real model* of sanitation and economy, it should not only include the latest perfected disposal system by means of incineration, but the mixed collection of ashes and garbage. It should also eliminate the fly and disease breeding dumps (covered ones as well as the uncovered), scows, and the pier for the collection of dead animals and condemned food.

It is now a generally accepted fact by all progressive sanitarians that a mixed collection is dustless, odorless and flyless on account of the disinfecting qualities contained in the ashes. It will, therefore, prove the most effective means of cleaning up the congested districts; by eliminating the fly, roaches, rats and mice, the spread of all contagious diseases will be greatly lessened.

According to an expert there are a million germs on a fly's head; surely this is the strongest plea for a mixed

made into bricks for sewer lining or paving. This vast amount of material for building or road making purposes could also be called for daily by boat, or used in that particular zone, thus cheapening cost of haulage.

The vast amount of waste materials, such as paper, rags, tin cans, scrap iron and other metals, scrap leather, rubber and other trade wastes, should be baled. The enormous amount of good boxes, barrels (selling from 5 to 25 cents), bottles (milk at 1 cent) should be sold by yearly contracts to the highest bidder. In order to avoid accumulations and keep the zone spotless and flyless, the contractors should call for them all daily, and as much as possible by boat, thus lessening expense of haulage. As the disposal plant faces the river, it will doubtless prove not only the cheapest way but avoid much congestion in the streets, just as the congestion and haulage of all the refuse, dead animals, condemned food and all other waste materials enumerated above will be greatly lessened by bringing everything in that particular radius to the "Zone" to be finally disposed of, besides freeing our beautiful river-front from many fly and rat-ridden pest holes.

A few examples of highest efficiency in sanitation, which eliminates the flies, rodents, dumps, scows, piers for dead animals and condemned food: I personally witnessed the collection of refuse twice last summer in Fuerth—acknowledged to be the most perfect system in Europe. There the Ochsner system of covered receptacles and motor trucks has been successfully adopted. It is absolutely dust, odor and fly proof because neither receptacle nor wagon is uncovered during the process of collection and on arrival at the destructor a traveling crane transports a division of the motor truck directly to the oven, the bottom is opened and the refuse drops into the oven of the incinerator.

According to the proposed "Zone Plan," if two men with the motor truck started to collect ashes and garbage at seven o'clock, before eight o'clock they would be able to deposit their load at the destructor and fifteen minutes later the incinerated refuse—now slag or residue—should be cooling in the yard, opposite the destructor, before nine o'clock, ready for the crushing process, thus taking less than two hours' time for the final disposition of the refuse.

At present, in accordance with the rules of the Health Department, the scows may not remain longer than twenty-four hours loading at the dump, but it often happens that if not filled, the scow is detained more than two days; consequently in warm weather the stench is insupportable. Meanwhile millions of flies breed and feed (besides numberless rodents) on the decaying garbage, condemned food, diseased animals and germ-laden waste materials.

But in comparison to our present unsanitary method of collecting and disposing of dead animals and condemned food the Zone Plan offers the highest, greatest and most desirable efficiency, namely, if a horse drops dead of glanders, or spoiled food has been condemned, the Health Department phones to the Inspector of the Zone Plant; he immediately sends his animal truck, or should it be on duty, it cannot be away more than half an hour within the radius of the Zone. So now again it may be safely stated that with few exceptions, in less than one hour after the dead horse or any other animal,

or condemned food, has been incinerated and is cooling in a sanitary, flyless, odorless state, ready like the other refuse to be added to the slag and made into bricks for paving or other purposes. All infected bedding and clothing can be disposed of just as quickly and cheaply.

In conclusion I venture to predict that possibly sufficient revenue may be obtained from the power generated, the sale of the slag and various waste materials to make the incinerator more than self-supporting. Add to this the money saved from the disposal of dead animals and numberless other expenses at present. Also consider the revenue diverted to the city from the use of the piers (\$10,000 from each borough) for the disposal of dead animals and condemned food.

Naturally, according to the vast amount and quality of refuse and waste materials collected in each Zone, it must differ correspondingly in its amount of revenue, but

Administration building of the incinerating plant at Fuerth, Bavaria, surrounded by flower, fruit and vegetable gardens.

collection—the elimination of fly and disease breeding dumps of all kinds and the incineration of all burnable wastes, in order to have a spotless, flyless city.

Judging from the report of the Model District, it provides only for a refuse collection method. Operation and maintenance necessary for this collection as well as the many street cleaning activities, will doubtless cost the city a large sum of money.

In most European cities, in Germany and Holland in particular, the "Zone Incinerator Plant System" has for years proven successful and self-supporting. In Rotterdam, after running the plant, crushing the slag, etc., the excess power is used to supply the entire electric car system of the city and there is still sufficient power for the proposed motor trucks. The power generated here would prove so even in a much greater degree, because the American garbage contains much more grease, and the ashes 20 to 30 per cent more heating quality, and the entire output is three to four times as large as in any European city.

On account of the low percentage of heating qualities in the mixed collection of ashes and garbage at Frankfurt-am-Main, it was found necessary to erect the incinerator on the same grounds with the sewage disposal plant, and in order to make it self-supporting the oils and grease obtained from the sewage had to be burned with the refuse.

Here, besides ashes and garbage to be used as fuel there is a large amount of condemned food, dead animals and trees, rejected piles, useless lumber and equipment from all the departments, infected bedding, carpets, manure, street sweepings, a great quantity of broken boxes, barrels, furniture, small burnable trade wastes and an amount of rubbish which is very great.

The power that could be generated from this vast amount of fuel could be used to light, heat and run the entire zone plant, crush the slag or residue and run the waste disposal plant. The excess power should be turned into electric storage batteries for the use of all the various motor cars and trucks for the disposal plant, as well as all required by the Department of Street Cleaning. With the exception of the three summer months there should be still sufficient power to supply the storage batteries for many of the municipally-owned cars and trucks of the fire and health departments or any other situated in that particular zone.

A second source of revenue, which if economically managed should be very large, is the vast amount of slag or residue derived from the incinerated refuse, to be sold either for concreting purposes, road making or

Weighing motor refuse wagon at entrance to incinerating plant.

since it will go directly into the treasury of the Department of Street Cleaning, it will certainly solve the much-to-be-desired problem of helping to place the department on a self-maintaining basis, or in other words, cut down the present expenses as much as possible.

But in order not to be misunderstood in offering this carefully laid out plan which includes every modern improvement for the collection and disposal of all city waste materials, the administration thereof, as well as sanitary working facilities for all laboring men at the Zone and the entire street cleaning force of that particular zone, I would suggest testing *only one* sanitary and profitable Zone incinerator plant; this should be included in or added to the present proposed Model District, adapted to its requirements so that it might prove a *real model*, for the disposal system is the root of the evil and should, therefore, be considered before the collection method on account of greater sanitation.

To further perfect the sanitary regulations of the Model District, besides the dustless, odorless and flyless mixed collection and metal-covered motor trucks, the receptacles for the street sweepings should have the same non-detachable covers as those for the refuse. All waste materials should be covered; each house should be provided with a shelter or place to keep them, in order to keep refuse cans off the sidewalks.

Section of motor truck body over oven of destructor, ready to be emptied into the incinerator.

* Cuts by courtesy of Real Estate Bulletin.