

WARING (G.E.)

THE DISPOSAL
OF
A CITY'S WASTE.

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THE DISPOSAL OF A CITY'S WASTE.

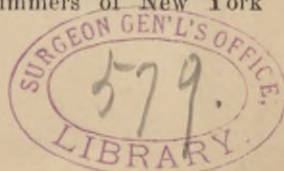
BY GEORGE E. WARING, JR., COMMISSIONER OF STREET-CLEANING
OF THE CITY OF NEW YORK.

EVER since the beginning of Liebig's agricultural writings, more than half a century ago, the quasi scientific world has been seeking means to turn the wastes of urban life into wealth ; and has been ascribing the downfall of empires to the pouring of those wastes into the sea. The less inexact science of these later days shows us how wastes sent into the sea come back to us in the form of fish and other sea products, to such an extent as to go at least very far toward the maintenance of general fertility in the land. We have not yet reached any very satisfactory knowledge as to the conversion of waste into wealth. While the theoretical value of discarded matters is recognized, the cost of recovery is still an obstacle to its profitable development.

In England, great sums have been lost during the past thirty years in the effort to get back the value of the fertilizing elements of sewage. It is now conceded by practical men that the very small amount of manure and the very large amount of water cannot be separated at a profit. Sewage farming is often the best agent of sewage purification, and it may lessen the cost of sewage disposal ; but it cannot under any ordinary conditions be made to pay a profit. This long-hoped for source of wealth must be relegated to the position of a very useful aid to economy.

There are, however, other wastes of life which are not diluted with great volumes of water, and which seem to give a fair enough promise of profitable use to make it worth while to consider them and their possible value with a good deal of care, and to make them the subject of conclusive experiment.

The experience of the City of New York in the matter of "scow-trimming" is suggestive. The scow-trimmers of New York
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are employed to distribute evenly over the vessels by which it is taken to sea to be dumped, the mass of garbage, ashes and street sweepings that is discharged upon them by the cartload amid a cloud of dust and often in quick succession. Under these difficult conditions, the Italian workmen fish out such as they can of the flying rags, bones, bottles, and other things of value that the material may contain. Each of the fifteen dumps is worked by its own gang for its own *padrone*, and these pay to the general contractor enough more than he has to pay to the city to leave him a satisfactory profit.

Up to about 1878 the city paid \$10.50 per week for each man working on the scows.* From this time until 1882 no charge was made for labor, the matters recovered being taken as an equivalent. Beginning with 1882, the privilege of scow-trimming brought to the city a money compensation of from \$75 to \$90 per week. The payment increased gradually, until in 1887 it reached \$320 per week; in 1888, \$685; in 1889, \$1,000; in 1890, \$1,068; in 1891, \$1,770; in 1892-93, \$1,795. At the end of 1894 it had fallen to \$1,675. There were occasional deductions on account of the temporary closing of dumps, but for some years the city has received annually over \$50,000 worth of labor and about \$90,000 in cash as the value of the privilege of gleaning from its dust chutes.

The following is the list of the articles collected, with the tariff of prices. It is furnished by the present contractor, Signor Carlo De Marco, Padrone:

Mixed rags.....	\$.50 per 100 lbs.
No. 240 " " "
Dirty white rags	1.00 " " "
Soft wools.....	2.00 " " "
Rubber.....	3.50 " " "
Bottles.....	1.25 " bbl.
Soda water bottles50 " " "
Lager beer65 " 100
Seltzer water	3.50 " " "
Iron	4.50 " ton
Zinc	1.75 " 100 lbs.
Copper.....	5.00 " " "
Brass	3.50 " " "
Pewter.....	10.00 " " "
Paper25 to .40 per 100 lbs.
Tomato cans (for the solder).....	2.60 a load.†
Old shoes65 to .15 per pair.
Hats.....	.01½ each.
Broken glass.....	.10 per bag.
Carpets.....	.25 " 100 lbs.
Rope.....	.50 " " "
Brushes05 to .15 each.
Fat	1.10 per 100 lbs.
Bones50 " " "
Hemp twine	1.00 " " "
Cloth.....	1.00 " " "

* There is no record of the number.

† This was formerly \$6 per load.

Dickens's "Golden Dustman" and the accounts of the rag-pickers of Paris have made us familiar with the fact that there is an available value in the ordinary *rejectamenta* of human life. We learn by the work of the dock Italian of New York that to regain this value is a matter of minute detail; it calls for the recovery of unconsidered trifles from a mass of valueless wastes, and the conversion of these into a salable commodity.

Reasoning from this starting point we may fairly assume that if there were a complete system for the collection of these objects at their source—at the houses in which they are discarded—much more would be recovered. As the subject is studied, it seems clear that the public authorities might with advantage take control of the whole business of the collection of rubbish. This would probably be necessary to the securing of a great pecuniary return. Such control would involve the suppression, or the public employment, of the push-cart man, who jangles his string of bells through the streets and carries on a more or less illicit traffic with domestic servants. These peddler-buyers are no more tolerable than were the long-ago discarded rag-pickers. Those who have cast-off things to sell should be made to take them to licensed located dealers, whose transactions can be held under proper supervision. The municipality should—in the interest of the public safety, as well as of the public finances—take up and carry on for itself, or through contractors whom it could control completely, the whole business of removing from houses whatever householders may wish to get rid of and will not take the trouble to carry for sale to a dealer.

It is not possible to make anything like a precise calculation as to the value of these many and manifold wastes, but it would seem safe to assume that with a universal and well-regulated collection and sale there might be recovered, in cash, one cent *per diem* for each member of the population, beyond the cost of collection and sale. This would amount annually to over \$7,000,000, enough to pay all the cost of street cleaning and street sprinkling, and, in addition thereto, to repave the whole city within a very few years, so far as this is needed, and to keep the pavements in repair perpetually. In due time it would pay for a complete supply of public urinals and latrines, and for other items of municipal housekeeping. There is, of course, no reason for fixing the amount that might be saved at one cent per person, any more than

at two cents or at half a cent ; but the ground for supposing that a very material amount can be secured is surely sufficient to make it worth while to experiment extensively to determine just what it will pay or will not pay to do.

The result of the investigation would be of value not only to the City of New York but to all other places,—large and small. Even if little or no profit should result from the collection and separation of salable rubbish, still a systematic and complete treatment of the offscourings of towns,—*and their prompt removal from houses*,—could not fail to be of much sanitary benefit. A study of the constructive geology of the outskirts of an American town will hardly furnish reason to commend the way in which “filling in” is making building lots for the growing population. Future ages may find in the long abandoned sites of American homes as curious if not as interesting subjects for archæological study as the homes of the cliff dwellers furnish for us.

The proper treatment, not only of rubbish but of garbage and ashes, will be an important element of a better civilization than ours. The “out-of-sight, out-of-mind” principle is an easy one to follow, but it is not an economical one, nor a decent one, nor a safe one. For other and more important reasons than the hope of getting money out of our wastes, should we pursue the study of the treatment of these wastes, and try to devise a less shiftless and uncivilized method than that which we now use.

In the matter of collection alone there is much need for radical improvement. The most bulky matters collected in New York are ashes and street sweepings. The latter are swept into little piles on the pavement, there to lie until the cart comes along, when they are shovelled into it. More or less powdered horse dung is blown into houses and into the faces of the people, according to circumstances ; on a breezy day it is considerably more. While the heaps lie awaiting the shovel they are kicked about by horses, dragged about by wheels, and blown about by the wind—also more or less according to circumstances. Ashes are kept in a barrel or in a can, which is also the depositing place of paper and other forbidden rubbish. In due time—more often in undue time—it is set out to decorate the house front in a way which it would be much less than adequate to call inelegant. What happens when this receptacle is tipped over the edge of the ash cart and rolled to and fro until it is emptied, no one need be

told who has paraded a city street in fine clothing while the operation is going on, with a good wind blowing.

The ash barrel and the "little pile" have thus far baffled all effort. We are hopeful just now that we shall succeed in having the ashes deposited in bags inside of the houses, the bags to be tied and thrown into the cart, not to be opened until they reach the dump. It is also hoped that street dirt, as it is swept up, will be at once shovelled into a bag supported open on a light pair of wheels. When the bag is filled it will be securely tied and set aside; and the cartman will collect the closed bags.

We are just now struggling with the separation of ashes and garbage. The Board of Health has ordered this in a large central district, and the area will be extended as success is achieved. The collection will be made separately and the disposition of the two will be quite different. An effort is also being made to have paper, and other forms of light rubbish, kept by itself and disposed of by the householder or by a public contractor.

Up to the present time the final disposition of all of the dry wastes of the city is by discharge from vessels into the sea. There are dumping boards along the water front where scows receive the contents of the carts. These scows are towed out beyond the Sandy Hook lightship and there unloaded. Aside from the wastefulness of this process, it gives occasion for serious complaint from those who are affected by the fouling of the adjacent shores of Long Island and New Jersey. Probably not much offensive garbage escapes the fish and the action of the waves, but enough of this accompanies the straw, paper, boxes, cans, etc., with which the shore is often heavily lined, to have very much the same sentimental effect that a solid mass of garbage would have. In any event, the result is very disfiguring and very annoying to frequenters of the beaches and to owners of shore property.

This constitutes a very serious menace to New York, Brooklyn, and Jersey City. The fouling of the beaches may at any time be made the pretext for protest, legislation, and injunction, such as we have already had with reference to Riker's Island and to local dumps in the Annexed District. This may have the effect of absolutely closing to these cities the only outlet they now have for their wastes. It is, therefore, incumbent on them to hasten as much as possible the development of some other

means for the disposal of their offal than the present barbarous one of dumping them into the ocean.

The writer has necessarily given much consideration to this general subject, and he is, so far as his official limitations permit, working in the direction of a complete separation of the material into four different classes :

1. Paper and other light rubbish ; 2. Street sweepings ; 3. Garbage ; 4. Ashes.

If the complete separation of these four classes can be effected, then the whole problem is practically solved. It is only because each one bedevils all the others that final disposal is such a serious problem. It is confidently believed that the separation can be effected, and within a short time. Were this accomplished, the four elements of the work might be developed as follows :

1. Paper, rags and rubbish of every kind, should be collected only by the city's own carts, or by the city's own contractors. It should not be permitted to sell any of the wastes of domestic life at the door. Licenses should be granted for dealing in these matters only to men who had fixed places of business, and who carried on their traffic only at those places. Everything of too low a grade to be carried to these establishments for sale would be collected—not from the streets but from within the houses—by the city's own agency, and all would be carried to local centres where they would be assorted, where all matters having a value would be classified and separated for sale ; and whence everything having no value would be carted to suitable crematories for final consumption. It is here, it is believed, that a large return could be secured to the treasury. The chief opposition to such treatment of the question would come from those who court the votes of the push-cart men, and whose argument it would be that an honest industry was being destroyed. This charge may be met in two ways : First, that too often the industry of these men is otherwise than honest ; and, second, that their work will still have to be done, and may quite as well be done by them as by others, with the simple condition that it is to be done under proper regulation. If everything of value that now goes to the dumps, to the paper dealer and to the junk dealer, could be made to pay tribute to the city, something like the result above hinted at may be expected.

2. Paper and all manner of dry rubbish being rigidly kept

indoors until taken by the collector, the sweepings of the streets—especially after the improved repaving—will consist of little else than horse droppings; and while these have not much commercial value in New York, they can at least be got rid of inoffensively and without much cost. It seems one of the absurdities of the situation that while stable manure is, probably, everywhere else in the world much sought after and salable at a considerable price, in New York it not only has no value, but can be got rid of only at considerable cost. The Department of Street Cleaning has over eight hundred well-fed horses. It is not able to get rid of the manure produced at its stables without cost and is now actually dumping it into the sea. This manure, of first-rate quality, was offered to the Department of Parks free of charge. The superintendent said that he would be very glad to receive it, if it was *delivered* free, but it was not worth transportation, because so many private stables were glad to haul manure to the different parks “free gratis.”

3. Garbage.—It has been the custom hitherto to mix garbage with ashes and rubbish. The separation of garbage from everything else is now being enforced. As soon as the separation is fairly accomplished, contracts will be made for the “reduction,” utilization or cremation of the garbage.

There are a number of patented processes by which grease is extracted from garbage, and by which, with or without the addition of other substances, a salable fertilizer is made of the residue. These processes are thus far all in the experimental stage. There is not one of them of which it is absolutely known that it would be safe or wise for the city to adopt it as the subject of a long contract. Investigations into the actual working and actual business conditions of the more important of these processes are now being carried on by the Department, and it is believed that before autumn enough will be known to indicate clearly what course to pursue. All that is definitely known now is, that there are several processes of cremation by which everything of this class can be absolutely and inoffensively destroyed at a cost that is not prohibitory. It is believed that there is more than one process of “reduction,” or utilization, that can be profitably carried on with little, if any, help from the city in the form of compensation. Indeed, one responsible concern is ready to make a contract to take the entire output of garbage as dumped from

the carts, and to pay a substantial price for it. The proper treatment of this subject will require, as in the case of paper and rubbish, the absolute control of the business by the city. Not only must we take charge of spoiled vegetables and the poorest and most watery garbage of cheap boarding-houses, but we should also have the richer product of hotels and restaurants. The city should, in short, assert its right to an absolute monopoly of the garbage business, for all garbage is a nuisance unless brought under proper control. Such control cannot be exercised by the city unless it takes possession of the entire field.

4. Ashes.—If we can withhold from the ashes produced in private houses all extraneous matters, as above described, bringing house ashes to the condition of what we now know as “steam ashes,” there will no longer be occasion for dumping at sea. The city has lands under water near by, like the very large inclosed tract at Riker’s Island and elsewhere along its water courses, where its ashes may be deposited with the very useful effect of creating valuable building land. Private owners of shore flats are applying constantly for such ashes, and to a certain extent are receiving them without cost to the city. Furthermore, these ashes have a decided value for other uses. It has been intimated to the Department that if they can be kept clean, a company with sufficient capital will take them all at more than the cost of collection, for the manufacture of cheap fire-proofing blocks, etc. The Department has been experimenting with ashes containing some garbage, just as it is hauled to the dump. This has been made into a concrete, with fifteen parts of ashes to one part of Portland cement, producing a result that would be admirably suited for the foundation of stone-block, asphalt, or other pavement.

The general conclusion from the above must be that while the question of the disposal of a city’s wastes is full of difficulty, it is also full of promise.

GEO. E. WARING, JR.

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