

most fashionable portion of the city." The city government finally got to reap the benefits of its enlarged tax base, and elite New Yorkers could celebrate their "fashionable" spaces. It was increasingly difficult, however, to call New York fashionable or even refined when the streets were filled with garbage and manure.⁶⁸

3

The Dung Heap of the Universe

New York City left quite an impression on Charles Dickens during his visit in 1842, and not because of the plethora of new parks. On Broadway, amid "ladies in bright colours, walking to and fro," he found two portly sows "trotting up behind this carriage, and a select party of half a-dozen gentlemen-hogs" turning the corner. Referring to one porcine acquaintance, Dickens declared: "He is in every respect a republican pig, going wherever he pleases, and mingling with the best society, on an equal, if not superior footing." Despite the park boom of the 1830s, pigs continued to rule the dirty streets of New York, "turning up the news and small-talk of the city, in the shape of cabbage-stalks and offal."¹ They were able to do this because the city's streets remained filthy.

While Dickens declared that Manhattan was the "beautiful metropolis of America," he quickly qualified that it was "by no means as clean a city as Boston." This was an era when a number of U.S. cities, including

San Francisco and New Orleans, were striving to improve sanitation. New Yorkers believed filth was a major blemish on their city's reputation. The notorious pig population was a symbol not only of the city's grime, but also of the municipal government's impotence. It must have been an amusing juxtaposition to see ladies promenading alongside mud-splattered swine on Broadway, the most glamorous street in the city. New Yorkers had long been struggling with this combination. In 1817, "A Citizen" wrote to the *New-York Evening Post* commenting that "there is a mixture of meanness and magnificence that seems to have entered the character of our city, as well as its appearance." Despite its wealth and standing, New York was the "*filthiest* city in the United States, if not the world."²

Without an efficient sanitation program or adequate infrastructure, the city provided a welcome environment for pigs, disease, and ridicule. Trying desperately to keep up with New York's burgeoning population, the Common Council passed ordinance after ordinance in an attempt to legislate its way out of the muck. The city government grappled with several major sanitation issues from the 1820s through the 1840s, including how best to sweep the streets, gather horse manure, and remove the city's human waste. Since aldermen routinely chose arrangements that saved or made them money over those that might have been more efficient and effective, the management of filth during the antebellum period was largely a private enterprise. While Manhattan's enduring problems with filth had a lot to do with crowding, loose animals, and rudimentary infrastructure, the value of garbage for private industry remained a central part of that equation. Removing waste was a moneymaking venture for local entrepreneurs. The municipal government's uneven involvement in sanitation, though, had severe repercussions. While epidemics affected all New Yorkers regardless of people's wealth, the poor felt the greatest impact.

The Common Council fielded a constant din of complaints from frustrated New Yorkers, but the panic became deafening when cholera seeped into the city's water system in 1832 and 1849. Public health crises

would serve as a tool for the growth of municipal power, though this growth was ultimately incremental and uneven. Pressure to reform the city eventually brought massive changes, but New York's notorious piles of filth were a mighty foe even for a determined city government.

Lost in the Mud

New York suffered from serious sanitation problems during the second quarter of the nineteenth century. As the city's population grew, so too did its garbage heaps. Householders dumped their trash onto the streets in anticipation of its collection by scavengers. Rotten food such as corn cobs, watermelon rinds, oyster shells, and fish heads joined with dead cats, dogs, rats, and pigs, as well as enormous piles of manure, to create a stench particularly offensive in the heat of the summer. Between the piles of odoriferous waste, deep mud puddles, and sauntering hogs, New Yorkers had much to complain about. One grumbled, "No one can cross Broadway but on tiptoe; ladies can only wishfully cast their eyes from one side to the other; if they have any regard for their clothes, will not venture further; indeed no pleasure carriage can drive the length of the street without being covered with mud so as to require washing before it can be used a second time." It was hard for elite New Yorkers to maintain a modicum of respectability under such conditions.³

In newspapers and books, elite New Yorkers alternated between chiding politicians and poking fun at the city's dire situation, or indulged in some combination of the two. An 1829 article, for example, lampooned Manhattan's situation. According to the story, a pedestrian came across a woman poking a stick into the mud on one of New York's main streets, saying, "Ah me! I'm sure he's here about some where, the dear cratur, and if I ounly had a longer stick, so that I could poke down a little grain deeper, I should find the darling!" The bystander asked, "What have you lost, good woman?" (offering to assist in the search with his cane), to which the woman replied, "Och, bless your kind sole! It's my swate little child, my darling Jemmy, that's lost in the mud." After a fair

amount of struggle, the bystander successfully pulled Jemmy out of the mud with his cane. The mother gently scolded her five-year-old son: "Jemmy, my dear Jemmy, listen to your mother, and never try again to cross the streets of this blessed city, till you're big enough to hilt yourself out o' the mud, jist, my darling." While this parody likely had New Yorkers chuckling about the accents or ridiculousness of the situation as they read their morning newspapers, the touch of reality in the tale gave everyone something to relate to. The filth in New York's streets made traveling through the city difficult for pedestrians, both young and old. Not only was it unpleasant to live with, but it was a handicap as New York strove to compete with other cities.⁴

New Yorkers fretted about their standing as the "filthiest city in the United States." Even though New York had developed one of the strongest commercial markets in the country by the 1820s, the city's inhabitants still felt uneasy about how it compared to the other metropolitan centers. Boston, for instance, was known for its cleanliness and, time and again, critics of New York turned their eyes to Boston as a standard for comparison. Referencing the city-versus-city competitive fever of the era, the editors of the *New-York Evening Post* chided the Common Council: "Are we too proud to take a leaf from [Boston's] books?" To the chagrin of New Yorkers, Boston prided itself on its superior and efficient street cleaning. New York's Board of Assistant Aldermen declared, "The city of New York, the commercial emporium of the western world, with her ample means, should never be behind her sister cities in the arrangement of her domestic comforts." New York needed to polish its image.⁵

New Yorkers also worried about how international tourists, such as Dickens, saw their city. If New York was ever to compete with London or Paris, tourists would have to be impressed when they visited. Dirty streets, however, obscured the civility and economic strength that New Yorkers hoped to exhibit. After the Glasgow printer Robert Hedderwick visited the city in 1823, he returned to Scotland with a scathing review of what he had found: "The streets of New York are not to be

perambulated with impunity by either the lame, or the blind, or the exquisitely sensitive in their olfactory nerves; to use an American phrase, a person must be 'wide awake,' not to dislocate his ankles by the inequalities and gaps in the side-pavements, or break his legs by running foul of the numberless moveable and immoveable incumbrances with which they are occupied." The *Evening Post* reprinted Hedderwick's article for local readers, as they typically did with published reviews about the city. New Yorkers were accustomed to such comments, and in their eyes the condition of the streets marred the city's identity as a growing metropolis.⁶

The councilmen were keenly aware of this issue and reevaluated the street cleaning system almost annually. Since garbage and manure were typically scattered all over the streets and sidewalks, "street cleaning" and "garbage collection" were two aspects of the same problem. In an attempt to improve the city's system, the councilmen called on grand juries to assess the state of the city's streets and suggest ways in which the council might improve conditions.⁷ Despite these efforts, citizens regularly complained that the Common Council rarely enforced its multitude of laws. Politics often interfered with efficiency. After the election of a new set of politicians to the Common Council in 1823, the *Evening Post* expressed the hope that the street-cleaning department would no longer be weakened by "party patronage and party jobs." Ineffective sweepers with political connections kept their jobs and their "good round salaries" despite the horrible state of the streets. Unfortunately, politics and general inefficiency continued to hamper street-cleaning efforts.⁸

New York wavered between running its own street-cleaning system and hiring contractors to fill that role. Every few years, the city switched between private and public solutions, convinced that one or the other would be more efficient or less expensive. The public/private debate involved both sweeping and collecting—two tasks typically separated in Manhattan's waste removal. Historically, garbage was a private affair. New York's property owners were responsible for sweeping the street and sidewalk right in front of their home or business. Twice a week

they would brush the waste into a pile for the cartmen to come and collect. While wealthier New Yorkers were able to assign this task to their servants or slaves, poorer New Yorkers had to take care of this arduous job before their workday began. In addition, landlords often neglected their rental properties. Consequently, working-class neighborhoods were even filthier than their wealthy but still grimy counterparts. The councilmen thought they could solve this inequity by hiring sweepers. In the best scenario, the sweepers would coordinate with collectors and sweep just before the carts came through. Unfortunately, their work was irregular and caused enough of a ruckus to annoy residents. According to the *Evening Post*, "When these gangs entered a street, there was a cry set up, lo! A troop cometh, and the windows and doors were shut, every aperture throughout the house was closed as soon as possible, the clothes-lines were stripped of the linen, &c., and every crevice was shut against the clouds of dust that filled the air and choked and blinded those who were so unfortunate as to be caught in the street." Critics recommended that homeowners should be responsible for their streets, given their stake in the outcome. Regardless of who swept the streets, there were problems with both private and public collection of the piles. The public-run system was riddled with patronage and the pressures of partisan politics, and lacked effective oversight. Frustrated with high costs and subpar work, the Common Council reverted to paying private contractors, but these, too, typically fell off schedule or failed to collect the trash. Neither the public nor the private system seemed to work.⁹

One of the repeated complaints leveled against street cleaning, both public and private, was that the trash collectors—or "scavengers," as they were commonly called—would pick and choose among the rubbish, leaving much of it behind. Collectors frequently passed over dead cats and rats, to the dismay of many New Yorkers. Scavengers were so selective because there was a huge market among regional farmers for the city's street manure. The very fact that the city could profit from its waste convinced critics that the publicly run option might not be as

much of a drain on the city's coffers as many feared. In the eyes of both politicians and entrepreneurs, the piles of horse waste might as well have been piles of gold.¹⁰

The Value of Manure

The average horse left behind thirty-five to forty pounds of manure each day, a good portion of which ended up on the city's streets. In 1835, with over 10,000 horses in New York, the city was a veritable manure factory. Horses pulled carriages, street cars, and fire equipment, hauled freight, and even powered industrial machinery. In short, horses made the city run. The number of horses would increase dramatically throughout the century, as the population boomed and the city's dependence on them persisted.¹¹

The enormous piles of dung were both a challenge and an opportunity for the city government. While the Common Council had to pay for the removal of residential and commercial refuse, manure provided a chance for the city to rake in a profit. The same farmers in the region who produced hay, vegetables, and grain for urban markets eagerly purchased the manure left on the streets. This large-scale regional recycling system helped to defray some of the city's sanitation costs while also servicing the farmers' need for fertilizer. Though the term "recycling" had yet to be coined, agriculturists used phrases like "nature's reciprocity system" to describe the reuse of waste to nourish farmland. As the agricultural journal the *Cultivator* put it, "What consummate folly to throw away the raw materials which form our daily bread!" With city residents and their animals consuming most of the produce from the hinterland, it seemed only natural that the city's waste should be returned to a farm, where it could benefit the next round of crops. Farmers who might otherwise have headed upstate or out west to find more arable land stayed near New York, in part because of the city's demand for their perishable or bulky products. Urban waste made it possible for them to stay. In its ideal form, the waste-recycling system

would allow the city and the country to develop and expand in tandem. City aldermen, entrepreneurs, and farmers each had reasons for embracing this system.¹²

Many of the farmers in New York's hinterland found it lucrative and efficient to use their land solely for the hay, grain, or vegetables they would sell to city residents. Until the invention of hay balers later in the nineteenth century, it was not profitable to transport the bulky material over long distances. Regional farmers, therefore, seized the opportunity to fill that niche. Hay was crucial for the city, after all, as it was the primary fuel for its transportation system: horses. In 1843 William Ketchum, a Long Island farmer, observed that in order to fully capitalize on this market, "farmers generally keep as little [live]stock to consume the produce of their farms as possible, selling their hay and grain at New York and Brooklyn, and buying their manure in return." Since there was little topsoil on Long Island, farmers needed significant amounts of fertilizer in order to produce high yields. Many Long Island farmers had been supplementing or replacing their barnyard manure with imported stable and street manure from regional cities (New York, Brooklyn, Albany, and Boston) since at least the beginning of the nineteenth century. The urban/rural recycling system allowed farmers to intensify their practices and devote most, if not all, of their land to cash crops.¹³

Farmers were not the only ones benefiting from this relationship. In 1830 the New York City government raked in \$19,033.45 for its street scrapings, which amounted to nearly 75 percent of the entire cost of cleaning the streets. During a time when street cleaning accounted for one of the city government's largest expenses, the ability to offset a major portion of the costs was not only good for the budget but also good for politics. While citizens complained endlessly about the dirtiness of the streets, they were suspicious about the high price of removing it. Contractors were notoriously corrupt and inefficient. By keeping the net cost down, the city tempered some of the criticism thrown its way. Manure ranked as one of the city's most profitable ventures, alongside taxes, tavern licenses, and the sale of public property. It was so impor-

tant to the city that the municipal government even appointed collection agents to visit farmers who had outstanding bills.¹⁴

City officials alternated between selling the manure themselves and selling that right to private contractors. Contractors submitted sealed bids to remove all of the city's trash, including its manure, and the lowest bidder typically won. The sale of manure helped to lower the costs of the bidders' estimates by offsetting their other expenses, sometimes even resulting in a profit for the city, if the value of manure was higher than the cost of removing the rest of the garbage. This system, while convenient and profitable for the city's coffers, was not without its faults. When, in 1825, the Common Council's Street Committee met to reform the system, they remarked that since only one or two contractors held the right to collect the entire city's manure and clean its streets, the system was inherently inefficient. "Those few having the monopoly, and paying a large sum for the privilege, their interest only was consulted by them, and the filth and dirt removed, only when the interest was best subserved." Citizens and reformers alike criticized the contractors for neglecting general sanitation in favor of collecting valuable dung. Less profitable refuse remained on the streets for weeks or months at a time, creating odors and providing the roaming pigs with fodder. Without sufficient public oversight, the private solution was unsustainable. It is easy to romanticize the filthy, "organic city" as a moment when cities were more in tune with their environments and where waste was not wasted, but the realities were not so ideal.¹⁵

From the perspective of farmers, however, the system seemed to work fine. As of 1842, the going price for street dirt purchased in Manhattan was a reasonable 30 cents per cartload. They could also purchase it more locally on Long Island or Staten Island for an additional 20 cents per load at the docks, though farmers would then need to arrange to have oxcarts deliver it to their farms. A typical oxcart could hold two city cart loads, or approximately twenty-eight bushels. Another option was to transport the waste via rail. By the 1840s, the Long Island Railroad provided a crucial artery for the development of the Island's agriculture

from Brooklyn out to North Fork. Milk, potatoes, blackberries, peaches, and fish went west to the city, while urban waste went east. In 1860, the Long Island Railroad transported more than 100,000 cartloads, or 1.4 million bushels, of horse manure. Since the railroad ran down the center of the island, it became easier for inland farmers to access supplies of urban manure. By 1849, New York's Commissioner of Streets and Lamps was looking to gain access to other railroads as well, notably the Harlem and New Haven lines, which would expand the city's fertilizer market by taking it into Westchester and Connecticut.¹⁶

Maintaining the quality of New York's street manure was a challenge for the municipal government. The New York State Agricultural Society generally considered street dirt to be "a great fertilizer but . . . not uniformly good." Farmers had to accept manure blended with a mess of garbage, including sand and remnants of building construction, as well as "brick-bats, paving stones, sticks, old shoes, iron and other refuse material." In an attempt to prevent such issues, the aldermen regularly appointed manure inspectors to monitor its quality. Even so, nonorganic rubbish still made its way into the bushels that farmers purchased. Despite these drawbacks, street dirt was an excellent fertilizer. Some of the city's accidental ingredients actually made the quality better. The Agricultural Society described it as "a compost of earthy substances ground fine by the constant attrition of carts and carriages, with lime from new and old buildings, ashes occasionally thrown into the streets, the droppings of horses and other animals driven about the city, and many animal and vegetable substances from the markets and houses, &c. All these, when mixed together, form a fermentative mass containing all the elements which nourish vegetation." For the better part of the nineteenth century, farmers continued to buy this bulky but accessible and relatively inexpensive manure to fertilize their crops.¹⁷

The municipal government was protective of its manure. Legally, whatever was left on the public streets was theirs. While private citizens were responsible for sweeping in front of their homes, they were forbidden to use or sell the street manure. As early as 1817, offenders would be

charged a fine of \$25 every time they tried to remove the odorous heaps—regardless of whether they were doing this for profit or for cleanliness. This provision in the manure laws points to the fact that independent entrepreneurs attempted to edge their way into the profitable fertilizer market by harvesting wealth from the city's public spaces. The Common Council felt compelled to protect its street manure monopoly. The city streets were public spaces, not common spaces, and city officials essentially declared that the manure was *theirs*.¹⁸

The municipal government had plenty of competition in the manure market. While horses deposited a significant amount of manure on the streets, they also left their valuable waste in stables, and stable owners used this to their advantage. Some farmers favored stable manure, since they thought it was likely to be free of impurities such as random rubbish, and they considered it to be in a separate category from street manure. Other farmers continued to worry about the purity of the product, however, especially as many middlemen were involved with the process. Stable owners sold their stores of manure to dealers, who then processed it and sold it directly to farmers. Unlike street dirt, which was pulverized and mixed by city traffic, the stable manure, though purer, had to be fermented before it was suitable for use by farmers. Sometimes this process was handled by the farmers themselves, but dealers could get a higher price for their product if they took the trouble to ferment it. Manure dealers deposited cartloads of waste on empty or abandoned lots near the wharves, so that they could easily ship their product after it had matured.

Quality control was also an issue for stable manure. Many dealers added in a number of materials in order to bulk up their product, compromising its effectiveness. The Long Island farmer William Ketcham reported that the "dealers and collectors are at great pains to increase its bulk by adding saw-dust, shavings, tan-bark, &c. giving the whole a rich dark color by a liberal use of the leaves of the sumack." The purest product, he advised fellow farmers, was sold in Albany, where "there is not the same inducements to so liberal use of the above ingredients as

at New-York." With demand high in New York, dealers had an incentive to do what they could to increase quantity at the expense of quality. Farmers also complained about the number of seeds found in stable manure. Horses could not completely digest certain foods, such as radishes, and as a result farmers had to deal with unwanted weeds in their fields. The same complaint, however, could be made about street dirt, "particularly in summer, when ever[y] kind of garden, fruit and flower seeds, thrown into the streets from the houses and markets, abound to it."¹⁹ One way or another, horse-produced urban waste was bound to cause the growth of weeds.

The location and storage of both street dirt and stable manure was a constant source of debate and complaint among New Yorkers. While urban waste was a definite asset for both the city treasury and private entrepreneurs, it was also a source of foul smells and, potentially, disease. The "mountains and pyramids of earth, which lie in huge cones and heaps," crowded sidewalks and streets, causing malodorous winds to greet the noses of residents and passersby. The manure dealers' process of raking the piles also angered urban residents who lived nearby, as it caused foul odors to rise and penetrate the surrounding neighborhood. The miasma theory of disease, which remained popular for much of the nineteenth century, held that diseases were transmitted through tainted air, indicated by odors. Sense of smell, then, was integral to the way nineteenth-century urban residents understood and shaped their environment. Critics of the city's hogs often used their horrid smell as an argument to get rid of them. The smell of decomposing matter and pungent manure triggered even greater fears of illness and danger. To make matters worse, manure heaps also attracted flies, especially in the warm summer months, which helped to spread the fear that disease was imminent.²⁰

The city government had to carefully balance the health of its residents with its own budgetary needs. Inspectors targeted the deposits of privately owned stable manure, especially as the dealers often fermented their product illegally on vacant lots. The City Inspector regularly required that street inspectors fence off unoccupied property to keep out



FIGURE 14. *North Battery, Foot of Hubert St., New York*, engraving by James Smillie, 1833, after a painting by Robert W. Weir. In 1831, the Common Council proposed using the dilapidated North Battery, on the Hudson River just west of Greenwich Village, to store the city's street manure. Nearby residents were outraged. (Emmet Collection, Miriam and Ira D. Wallich Division of Art, Prints, and Photographs, The New York Public Library, Astor, Lenox, and Tilden Foundations.)

trespassers who might dump manure or other waste. While the city government punished private manure dealers, they also tried to manage the municipal piles. The aldermen recognized that piles of manure left for long periods of time were "not only extremely offensive but injurious to the health of the Citizens." The main issue, then, involved finding an unobtrusive place to deposit and store manure and arranging ways to remove it swiftly. The storage place for street dirt needed to be "removed far from the dwellings of man" but also close enough that carters could reach it easily. After the city established specific wharves where scows and other boats could dock to receive and remove the manure, nearby residents lodged complaints about the choice of docks.²¹

For a brief moment in 1831, the Common Council considered transforming the old North Battery, built as a fort for the War of 1812, into a manure storage facility (see Figure 14). The Common Council's Committee on Wharves, Piers, and Slips that came up with this proposal had been facing complaints from residents living near the manure docks. Whereas Castle Clinton, formerly known as the West Battery, or Fort Clinton, had opened as a fashionable resort in the heart of Battery Park in 1824, the city had left the North Battery vacant. The fort was in poor condition and would require significant renovations in order to turn it into an entertainment center similar to Castle Clinton. The committee boasted that the site was surrounded by nothing but a few vacant buildings, so there were "no Inhabitants to be annoyed" by manure boats docked at the basin. The structure itself could hold 20,000 loads of manure, and the space outside it even more. Manure boats could easily dock at the long wharf attached to the fort and ship the material elsewhere. The aldermen quickly approved the measure.²²

The proposal was hardly as popular with the public. The *New-York Spectator* called the plan "preposterous"—an abomination that would be "morally, as well as physically, a stench in the nostrils of the community." Angry citizens sent remonstrances to the Board of Aldermen until the measure was eventually dropped. Though the residents of that part of the city preferred a plan for a promenade and entertainment center, in the end the city demolished the structure. While the city government found manure to be a gold mine, city residents were none too pleased to have it stored in their neighborhoods.²³

Urban fertilizer certainly had its supporters, but it also left many complaining. While regional farmers used it as a means to transform their farms and focus on market crops, the benefits for the city were less obvious. The government and manure dealers profited, but the city streets remained filthy. Residents had to step clear of the piles of what, to them, was valueless waste on the pavement and deal with the unpleasant odors produced by all of the manure stored on nearby docks

and lots. The countless manure piles would seem even more threatening once cholera arrived on the city's shores.

Cholera's First Visit

Cholera found a welcome home in New York City, due to the burgeoning population and ramshackle infrastructure. Immigration outpaced the housing supply, forcing high-density living in neighborhoods ill-equipped to handle the needs of their new residents. High real estate values compounded this issue, forcing poor families to squeeze into as little space as possible. With an inadequate water supply, badly managed waste removal, and a privy system better suited to a smaller population, Manhattan offered some of the best conditions for cholera to thrive.²⁴

Cholera is a bacterial disease that typically spreads through contaminated water, as well as uncooked fruits and vegetables. People infected with the bacterium *Vibrio cholerae* suffered from diarrhea that led to severe dehydration. About half of all people infected with cholera died, often within hours of showing the first symptoms. When the sick used their privies or cesspools and the waste overflowed into the nearby water wells and basements, cholera spread rapidly through the neighborhood. By 1832, only the poorest classes of New York used the pumps for drinking water, as many who could afford to bought water imported from elsewhere in the local region. Still, pump water was commonly used for washing clothing and for other household needs.²⁵

Since the water-borne nature of the disease was not yet known, scientists, doctors, and the general public had several theories about how cholera spread. Many believed, for instance, that miasmas, or odors, spread the disease. Poor sanitation and bad drainage—typical in nineteenth-century cities like New York—were responsible for such smells. When severe outbreaks of cholera hit neighborhoods built over swampy land, such as Five Points, the miasma theory seemed to have proven correct. This theory also helped to justify complaints against storing manure in

dense neighborhoods. New Yorkers fretted about these smells and conditions. In 1832, with cholera threatening to visit New York following its European tour, a committee of doctors guided the Common Council on preventive measures. They warned that "the destroying angel, should he visit our city, would walk unseen in the midst of us, enveloped in a pestilential vapour." Some doctors argued that the seemingly atmospheric qualities of cholera explained not only how the disease moved from country to country, but also how it could affect New Yorkers from a wide range of neighborhoods and social classes. Quarantines had been the go-to method of preventing public health disasters during past yellow fever outbreaks, and though the city still instituted them, people were beginning to question their value. Cholera seemed to defy such barriers.²⁶

Panic pervaded the city in the summer of 1832. Without a solid grasp on how to stave off the epidemic, people took solace where they could. Former mayor John Pintard found comfort in the fact that cholera seemed to favor the poor and depraved. He wrote, "At present it is almost exclusively confined to the lower classes of intemperate dissolute & filthy people huddled together like swine in their polluted habitations. A visitation like the present may work beneficially to promote Temperance, proving a blessing instead of a curse." In retrospect, it certainly seems perverse that Pintard found a silver lining amid the horrors that cholera was spreading in the city. Yet his perspective was far from uncommon. As someone who felt righteous, Pintard must have been reassured by the idea that the afflicted had somehow brought cholera upon themselves through their own bad behavior. He hoped this would scare sinners into a more virtuous life. Other temperance advocates pleaded with New Yorkers to abandon alcohol in order to keep their constitutions strong. Handbills and newspaper articles warned readers to avoid specific foods, such as shellfish, cucumbers, and watermelons, to cook all foods, drink milk, bathe regularly, dress in warm clothing, and, most of all, stay calm. In other words, New Yorkers should embrace

"TEMPERANCE, CLEANLINESS, FORTITUDE, and FEARLESSNESS" if they had any hope of remaining alive.²⁷

Having visited ailing Montreal and corresponded with European officials, New York's Board of Health declared that good sanitation was the key to saving the city. According to its report, New Yorkers had to keep their bodies and homes clean, as well as their city. The city had a handful of public baths set up for residents, though little could be done to force New Yorkers to use them. The Board of Health, which consisted of aldermen as well as medical professionals, instituted a policy in mid-June 1832 giving aldermen and anyone in their employ the right to inspect the "dwellings, yards, and premises" in their wards, to make sure that their constituents were doing their part to keep the disease at bay. The board designated the aldermen "Health Wardens" responsible for making sure residents followed all public health laws. The city was desperate to enforce such laws in the face of a potential crisis, and putting responsibility in the hands of the most public figures in the wards seemed to be the best way. Several aldermen informed the Board of Health that they had employed teams of laborers and carts to go through and purify private property in their desperately dirty wards. They were happy to report that the laborers had been "aided by the uniform voluntary and cheerful cooperation of the Inhabitants who appeared to be actuated by one general sentiment of submitting to private inconvenience for Public good." It seems unlikely that every poor family was eager to have their home whitewashed and covered in lime by government officials, but among middle-class and wealthy New Yorkers there was plenty of support for these intrusive measures. The *New-York Spectator* commended city officials for their efforts and encouraged them to go further: "Let . . . the inhabitations of the poor be well white-washed, and all filth removed from them, and let them be inspected daily, that no offal matter be collected. If the houses of the poor be found crowded, let their inhabitants be dispersed at the expense of the corporation, and provisions made for them without the bounds of the city. Especially let

those be removed who live in cellars and damp situations." Cholera gave the city government the power not only to intrude on private residences in order to purify them, but also to remove residents from their homes. The public health crisis aided an increase in municipal power for the sake of public good. Private spaces were now a public concern.²⁸

Unlike private residences, streets were more typically under the jurisdiction of city agencies. Yet the streets seemed wildly out of control. Waste removal continued to be an issue. When the Board of Assistant Aldermen formed a committee to review the city's street-cleaning policies early in the summer of 1832 before cholera struck New York, they noted: "That terrible disease, the *cholera*, which has caused so much alarm throughout Europe, has as yet prevailed extensively only in the most dirty and filthy districts, and among such classes as neglect a proper degree of cleanliness." The committee was well aware that New York's filth could rival that of most other cities, and they would therefore need to make drastic changes in order to prevent a cholera outbreak. They proposed abandoning the use of private contractors and instituting reforms that expanded bureaucratic control of the streets—hiring professional street sweepers and multiple street inspectors who would supervise sweeping and collecting in the morning, between sunrise and the start of business. Though neither of these proposals was particularly novel given that the Common Council had already attempted them in one form or another, there was a new sense of urgency. In the past, the aldermen had shied away from public control because of the taxes that would be necessary to finance the effort, but they now felt that there was a worthy cause. At a cost of about \$1.25 per householder for the year—the equivalent of what families annually spent on brooms—not only could the public spaces be thoroughly cleaned and many lives saved, but men who would otherwise depend on public welfare could find employment. The city instituted the new street-cleaning policies on June 13, 1832, less than two weeks before cholera struck the city. One resident remarked how shocked he and other New Yorkers were to see the streets clean. An elderly woman who had lived

in the city all her life purportedly declared, "I never knew that the streets were covered with stones before." It seemed that the Common Council was taking bold, definitive steps toward true reform. The public health crisis trumped the earlier political debates that had hampered full reform.²⁹

Yet when cholera finally arrived on June 26, New Yorkers did not place all their faith in sanitation. New York State governor Enos Throop wrote in a statement to the state legislature that an "infinitely wise and just God has seen fit to employ pestilence as one of the means of scourging the human race for their sins." A solution, of course, was to declare a citywide day of "fasting, humiliation and prayer." Alderman Cebra, who introduced the measure in the Common Council, contended that a great number of the city's "respectable citizens" had petitioned them to do so. The city designated August 3 as a day in which "all the people may unite in imploring the mercy of Heaven, that the plague may be stayed, and our city restored to its wonted state of industry and health." With the clergymen unable to coordinate their efforts, the aldermen took it upon themselves to take care of the city's spiritual health. The city had to prepare in whatever way it could.³⁰

Spirituality, however, was just one mode of defense. Even in 1832, a number of people in the medical and political communities, as well as in the general population, embraced the idea that diseases might result from environmental conditions, such as filthy streets and homes. Though they might cite God's will, they also emphasized the importance of sanitation. The aldermen still had to grapple with the city's sanitary conditions, despite vigorous measures taken before the outbreak. Hogs, for instance, continued to roam the streets. With a public health crisis at hand, the aldermen were reenergized to tackle this political minefield, and they passed a new version of the anti-hog law just as cholera struck the city. Owners were fined \$5 per loose hog and had to collect their animals at the local pound after paying for their room and board. If the hogs were not claimed by their owners, they would be sold at a city auction. Despite these efforts, the hogs remained. In August, a month after

the law was officially on the books, an "Indignant Citizen" wrote to the *New-York Mercury* complaining about the number of hogs on the streets. He blamed the hogs for his family's ailments: "Two inmates of my family have been carried to the grave within the last year, and I verily believe that the existence of two hog-pens hard by me, and the effluvia created by swine running in the streets, may have had an influence in hurrying these people out of life." The writer implored the aldermen to enforce both the law against swine and the street-cleaning law, which (as usual) had not been enforced. He reasoned that if the law indeed kept people from throwing garbage in the streets, the hogs would have nothing left to subsist on. While the city had high hopes for reform and even touted its improvements in official documents and meetings, the reality was less than stellar.³¹

Hogs were a saving grace for the city's poor during the cholera epidemic. Most of the businesses in the city closed their doors when New Yorkers with resources escaped to their summer homes to avoid the epidemic. Those who relied on "their daily labor for their daily bread" were at a particular disadvantage. Lacking the means to leave town and unable to work, they were left at the hands of charity. Committees and benevolent organizations formed to gather donations and food for the poor, but they could not solve the entire problem. Hogs provided an inexpensive food source for their owners. The aldermen renewed their efforts in August to sweep the city clean of hogs, but were met with resistance. The mostly Irish owners came out in force, as they had during the earlier hog riots, to protect their livestock from collection. In the end, the hogs remained, as did the city's larger sanitation issues, despite the renewed push to clean the city for the sake of preventing cholera. After several decades of unsuccessful attempts to establish a workable sanitation program while also pursuing the sale of manure, the city government's last-minute attempts to reform the streets came far too late. Too much needed to be done to effect real change that could save the city from devastating epidemics.³²

Panic did not cease with the waning of the 1832 epidemic, despite the return of most New Yorkers and the reopening of businesses. Though the epidemic receded, it did not disappear. For the next two summers, cholera returned, reminding New Yorkers of the need to persist with their sanitation efforts. Following each outbreak, New Yorkers grew even more enraged about filthy streets now that their lives were so clearly at stake and cholera was fresh in their memories. By May 1833, the *New-York Spectator* reported: "[It] is a remark in the mouth of everybody, that our streets were never in a more filthy condition than at present." The *Spectator* as well as other newspapers saw this as ominous. While other cities were actively looking to improve their public spaces, New York's aldermen appeared to be idle. The *Morning Courier and New-York Enquirer* railed that the municipal government practically invited the disease back onto Manhattan's shores by neglecting the "precautions which guard against it."³³

New York's filth was closely bound up with politics. By the spring of 1834, months before cholera's final appearance in the city during that decade, Andrew Jackson's controversial Bank War was brewing. National political debates over the fate of the powerful, federally chartered Bank of the United States played out in the local politics of the city. The Whig Party formed on both a local and national level in response to Jackson's attack on the bank. Despite the centrality of national issues in the election of 1834, local issues, including the city's filth, also played a role. The city's Whigs used the sanitation problems as a way to jab at their Democratic foes, who ran city government. Critics referred to street manure as "Jackson mud," pilloried the city leadership as the "Jackson dynasty," and criticized the Democratic street inspectors as "too busy just now, in patriotic labors to keep their offices, to leave much time for the discharge of their duties." In the first election that allowed New Yorkers to vote directly for their mayor, the anti-bank Jacksonian Democrat Cornelius Lawrence won by a slim margin. The newly formed Whig Party, however, celebrated its success against the more established

local Democratic organization, Tammany Hall, in winning a majority on the Common Council that April, though the city streets hardly benefited in the years that followed.³⁴

Not only did the 1832 cholera epidemic inspire political rancor, but it also led to political action on a long-debated topic: the city's water. For decades, New York had suffered from an inadequate supply of fresh water. Large-scale fires that destroyed hundreds of thousands of dollars' worth of property were common enough to inspire committees of aldermen to consider ways to reform New York's shoddy infrastructure, but cholera was the impetus for more decisive action. The Manhattan Company, founded by Aaron Burr, had had a monopoly on the city's water supply since the turn of the century. Though it laid pipes, the company had more interest in establishing its profitable banking arm than bringing long-lasting change to New York's water supply. In addition to the Manhattan Company's water, which was drawn mainly from the swampy and tainted former Collect Pond waters under Five Points, a few hundred wooden pumps could be found on street corners, though the free water they spouted was the most contaminated in the city. With quantity and quality lacking, reformers argued that it was time to bring in water from beyond salt-water-ringed Manhattan. In 1831, before cholera hit, the New York Lyceum of Natural History reported that New York's water supply was filled with organic matter leaching from the privies and the streets. They estimated that more than a hundred tons seeped into the city's water each day. While the Common Council discussed the failures of the Manhattan Company and the ways to release themselves from the company's monopoly, they could not agree on whether the city should fund a large public works project. Newspapers, however, continued to push for municipal action.³⁵

Finally, with the fear of cholera fresh on their minds and the need for clean water imperative, the Common Council, the mayor, and the state legislature agreed in early 1833 to appoint a commission to handle

supplying the city of New York with pure water. Though it still was not clear to New Yorkers or anyone else that cholera stemmed from contaminated water, what was clear was that clean water was a fundamental ingredient for good sanitation and healthy people. When the commissioners presented a report to the Common Council in the spring of 1835, they recommended a \$5.5 million public works project that would bring water from the Croton River in Westchester via an aqueduct into Manhattan. The Common Council's Committees on Fire and Water supported this project and asserted that the "*public health requires it.*" They argued that "Bad air and bad water are leading causes of sickness in all populous towns. With a river at our command the causes of the noxious vapours which our gutters now supply, and which contaminate our air, will be removed." Tainted water also cost the city commerce. During the recent cholera epidemics, businesses had closed and laborers as well as capitalists had lost money. New York needed reliable sanitation and quality drinking water in order to be a functioning and competitive city.³⁶

New Yorkers came out in support of the grand public works project in mid-April 1835, voting three-to-one in favor of the measure, with the most support coming from the wealthier wards downtown. The "Great Fire" that struck the city's business district that December further underscored the need to establish a reliable and extensive source of water. Since the current reservoir was depleted and the pipes and pumps were frozen, firefighters had a difficult time subduing the fire, which ripped through twenty blocks downtown. They tried in vain to chop through ice in the East River and shuttle water to the flames. Raging for three days, the Great Fire destroyed roughly 700 buildings and at least \$20 million worth of property, more than three times the cost of the Erie Canal. This disaster had many repercussions, including the bankruptcy of most of the city's fire insurance companies, the unemployment of thousands who worked downtown, and the rise of the penny press to meet New Yorkers' demand for information. It was also increasingly difficult to argue against the need for Croton water.³⁷

After seven years of budget negotiations, engineering puzzles, labor disputes, and difficulties with Westchester landowners, Croton water finally reached Manhattan in 1842. On October 14, the whole city came out to celebrate its arrival downtown with a parade and several speeches. One hundred guns were fired at the start of the day, followed by the ringing of all the church bells. Engineers, city officials, firemen, temperance societies, and a slew of mechanics and other citizens joined in the seven-mile-long parade. The *New-York Tribune* declared the occasion to be one of the most significant in the city's history—second only to the opening of the Erie Canal.³⁸

With the promise of a steady supply of water from the Croton Aqueduct, washing the streets was finally feasible. Good sanitation seemed likewise attainable. The fountains in Union Square and City Hall Park jetted far into the air, celebrating the abundance of water that the city's new infrastructure could deliver. During the celebration, the New York Sacred Music Society, as well as New Yorkers who received freshly printed copies, sang "The Croton Ode" by poet George P. Morris. Together, they chanted:

Water leaps as if delighted,
While her conquered foe retire!
Pale Contagion flies affrighted
With the baffled demon, Fire!
Safety dwells in her dominions,
Health and Beauty with her move,
And entwine their circling pinions
In a sisterhood of love.

Hopes ran high that Croton water would improve public health through a combination of clean streets, pure drinking water, and a decreased dependency on alcohol. The panic over epidemics and fires, paired with pressure from business interests, helped the city take control of this public amenity that had so long been in private hands. Water meant

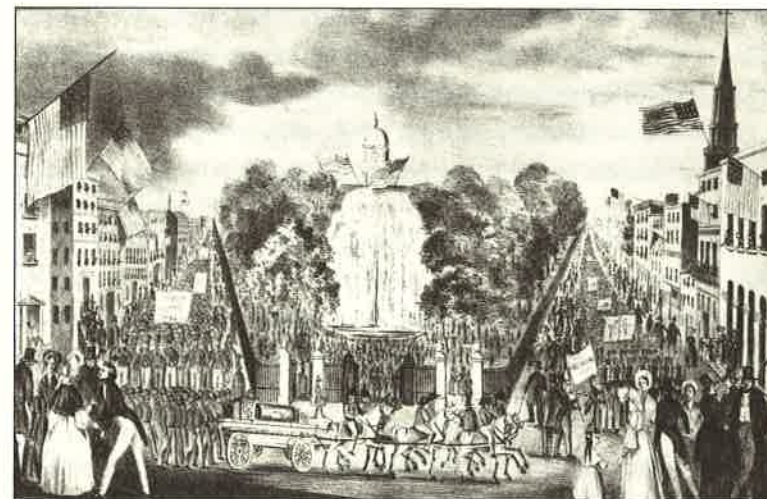


FIGURE 15. J. F. Atwill, *Croton Water Celebration*, 1842. With the fountain squarely in front of City Hall, this lithograph, which was distributed during the celebration on October 14, 1842, on the cover of sheet music for the "Croton Ode," celebrated the power of New York's municipal government to bring about great public works. (Collection of the New-York Historical Society.)

survival for the expanding city. Unfortunately, the aqueduct could not solve all of the city's ills. New York's privy system left much to be desired.³⁹

Privy Profits

In 1844, the Board of Aldermen estimated that the residents of Manhattan were producing somewhere between 700,000 and 800,000 cubic feet of "excrementitious matter" each year. As a point of comparison, this amounted to roughly half the amount of horse manure being shipped on the Long Island Railroad in 1860. Humans were not as prolific as horses, but their waste still posed problems for a city with a rudimentary

infrastructure. Property owners had to hire night scavengers to empty their privies at least once a year, to keep the containers from overflowing. In the best scenario, the night scavengers carted the material away in closed containers and dumped it in the slips between the docks of either the Hudson or the East River, while their clients slept soundly. In reality, though, the containers were inadequately sealed, allowing odors and a slimy trail of liquids to escape while horses pulled the carts down bumpy streets.⁴⁰

While the city government had gained significant power to control the urban environment as a result of the cholera outbreak, it remained unable or unwilling to tackle issues relating to "night soil" (a contemporary euphemism for human waste). The most visible of these issues involved its disposal. The material that made it to the rivers settled into the slips, making it difficult for ships to dock. The City Inspector's office had to pay to have the slips dredged on a regular basis—a costly and temporary solution. Two private companies approached the city, however, with a proposal they claimed could save the municipal government money and headaches. These companies—the New-York Poudrette Company and the Lodi Manufacturing Company—turned human waste into fertilizer for East Coast farmers. For exclusive rights to the material, the companies pledged to pay the night scavengers 25 cents per cartload, giving the scavengers an incentive not to dump their material at a more convenient dock. While the city would not profit in the same way it did with street manure, since it was not directly selling the waste, the companies' proposals seemed likely not only to save the city the cost of dredging slips, but also to solve some of the city's smelliest sanitation issues. This was yet another private solution for a public issue.⁴¹

Though the New-York Poudrette Company and the Lodi Manufacturing Company, established in 1837 and 1840, respectively, were at the forefront of a new industry in the United States, they were hardly novel in terms of European and Asian developments. Most famously, Parisians had long been tinkering with ways to use human waste as fertilizer on local farms. At the turn of the nineteenth century, the French

chemist M. Bridet had patented a deodorized and dried fertilizer called "poudrette" (from the French word *poudre*, meaning "powder") made from the human waste of Parisian cesspools. The Montfaucon waste-processing center outside Paris was legendary in the minds of American agriculturists and entrepreneurs keen on turning urban waste into profits and produce.⁴²

Looking to revolutionize fertilizers and make money from a neglected resource, businesses popped up around American cities, where human waste was plentiful and relatively convenient to collect. Both the New-York Poudrette Company and the Lodi Manufacturing Company wanted local farmers to be their stockholders, since farmers would be the main consumers. They offered benefits such as guaranteed poudrette for five years, in return for each share a farmer purchased. The processing of poudrette required enough equipment, facilities, and labor to make the business much more capital-intensive than the processing of street manure. Through the intensive French process that turned waste into fertilizer, the companies were able to do away with "the disgusting, offensive character" of the night soil. Marketed as a concentrated fertilizer, poudrette required extensive labor and specialized equipment to reduce its bulk and transform it into a less offensive form. The New-York Poudrette Company, founded by Daniel K. Minor, had its offices and factory in Manhattan. Minor expanded the company's activities to include emptying privies and transporting the contents directly to its factory. New-York Poudrette did not survive more than a handful of years, but the Lodi Manufacturing Company had better luck. Established by Anthony Dey, Jacob C. Dey, and Peter Barthelémy, a former colleague of Minor's, the Lodi Company shipped Manhattan's waste to its facilities in Lodi, New Jersey. The company had its eye on large-scale distribution, posting agents throughout the Northeast so that farmers distant from New York could place orders. To farmers accustomed to purchasing other urban-waste fertilizers, poudrette seemed to be an easy substitute for the more typical street scrapings and stable manure.⁴³

The long process of creating poudrette began when barges pulled up to the company's wharf from New York, ready to deposit their cargo.⁴⁴ The Lodi factories were located on 400 acres of salt marsh and meadowland along the Hackensack River. Most of the property was used to produce hay for the New York City market, while six acres were devoted to the factories. The barges would arrive with approximately 8,000 bushels of New York City's night soil, and workers would transfer the material with buckets into canal-like reservoirs. The privies' contents passed through a large sieve as they entered the reservoir, separating all other types of refuse commonly discarded in the outhouses. The *American Agriculturist*, a monthly journal, remarked on the wide range of refuse found and repurposed. Workers recovered jewelry and money accidentally lost, "perhaps one incentive to the following of a business at best unpleasant." Female workers collected the glassware and animal bones and sold them to various merchants and dealers. Other refuse ranged from toys and shoes to kitchen pots. The poudrette companies had to be careful to remove this refuse if they wanted their product to be valuable and reliable.⁴⁵

After Lodi's employees sifted the manure, they shoveled it onto drying beds consisting of a combination of wood planks and naked, smooth ground. They then spread the night soil thickly over a thin layer either of muck from the surrounding marsh or of alluvial soil from the Hackensack and Passaic rivers. Early in the company's history, it seems that the night soil was also combined with peat moss ground in horse-powered machines. While it all dried, Lodi employees shoveled it several times to mix the night soil thoroughly with the muck. Once the mixture was dry and blended, the men carted it to the screening buildings, where they piled the fertilizer into large heaps and mixed it further to make the product as uniform as possible. The men then beat the piles through box sieves with a shovel in order to pulverize the dried manure as finely as possible. Packed in barrels, the poudrette was finally ready for market.⁴⁶

Proponents of poudrette were especially enthusiastic about reclaiming the nutrients otherwise being lost in the rivers. Poudrette fit firmly



FIGURE 16. Men shovel sifted night soil onto drying beds, at left, while ships on the right deliver more from Manhattan. Engraving by Lossing-Barritt from Lodi Manufacturing Company, *Circular* (New York, 1852), 4. (Courtesy of the American Antiquarian Society.)

in the urban/rural recycling system that had matured over the previous few decades. To many farmers, entrepreneurs, and city leaders, it seemed only logical that New York's human waste should be utilized like its animal waste. The exchange between the city and the country had the potential to solve the city's problems with human waste while also benefiting the country. In the Lodi Company's incorporation papers, the founders celebrated the role that the firm would play in this reciprocal relationship. "It is difficult to conceive of any improvement combining more directly the interest and convenience of the city and country. The Docks have been made offensive and unhealthy, and must often be cleared out by mud machines—the fish in the cars rendered objectionable, and thousands who live on shipboard, offended by the state of the docks. If all these evils can be remedied, and the grand nuisance of the cities be required and demanded by the country, it will form a combination of benefits most devoutly to be wished." Lodi claimed that property values would rise and public health would improve. The city's

gain would be the country's gain. While the Lodi Company was eager to emphasize this idyllic urban/rural relationship, the reality was murkier. The company, firmly rooted in the emergent industrial economy, had much to gain from the city's human waste.⁴⁷

Yet not everyone was enthusiastic about poudrette. An editor of the *Cultivator*, an agricultural journal, noted that "its use has always been limited, owing to prejudices arising from its disagreeable nature, and its offensive odor." Some shied away from using the manure because of its human source. While the odor of horse manure was familiar in the cities and countryside of the nineteenth century, human waste had a more pungent smell that held taboos for many. The Lodi Company repeatedly attempted to assure potential customers that their "chemical process" removed all smell from their product. A good number of farmers were so interested in experimenting with urban-waste fertilizers during this period that they found it possible to move beyond cultural taboos.⁴⁸

Poudrette companies advertised that their product was twelve to fifteen times more potent than other urban fertilizers, such as street dirt. In 1840, the Lodi Company guaranteed shareholders fifty bushels of poudrette annually for five years. At \$100 per share, this made poudrette over eleven times more expensive than local street manure. For \$100, a farmer could have purchased roughly 2,800 bushels of street manure in 1842. To make its price reasonable, poudrette would have to live up to the company's claims that a little would go a long way.⁴⁹

The reviews were mixed. While some farmers reported success, many more believed that poudrette was not nearly as effective as advertised. Farmers wrote letters to agricultural journals describing their results. For example, H. B. Glover of Newtown, Connecticut, reported that poudrette provided no visible benefit to the corn he planted. Fertilizers high in nitrogen, like poudrette, typically produced greener leaves that grew quickly at first, but eventually growth would slow and plants would mature at the same rate as did plants nourished with other manures.⁵⁰

Farmers also accused the poudrette companies of adding extra ingredients that impaired the quality and effectiveness of the manure. As early as 1842, the New York State Agricultural Society contended that while poudrette was advertised as stronger than stable manure, "it has been found otherwise in practice, the article being so diluted with peat or other earthy substance as to reduce its strength and value." Some of the waste the poudrette companies tried so diligently to sift out of their product likely still remained. Coal ashes, for instance, would have been almost impossible to separate out using their rudimentary methods. The Lodi Company responded by claiming that they stood behind the quality of their product. They also advertised extensive improvements to their poudrette that made it the "cheapest and best Manure now known," relying on such claims to persuade skeptical consumers and attract those hesitant to work with human waste. Yet when Yale agricultural chemist Samuel W. Johnson analyzed Lodi's fertilizer in his *Essays on Peat, Muck, and Commercial Manures* in 1859, he found that "all manner of city refuse, old nails, apple-seeds, &c., &c., are found in it." In addition, the value of poudrette depended on how much was needed, compared to other fertilizers, in order to produce similar results. Many farmers found they needed much more than Lodi advertised was necessary, making poudrette less cost-effective than the company claimed.⁵¹

Poudrette never caught on as a long-term solution for most American farmers. Most poudrette companies based in American cities lost out to competition with cheaper urban-waste fertilizers, Peruvian guano that came from bird waste, and eventually chemical fertilizers toward the end of the nineteenth century. The Lodi Manufacturing Company lasted into the 1870s, surviving as long as it did by reformulating its product and combining it with popular fertilizers such as guano to attract new or skeptical customers. Even so, the Lodi factory was able to produce only a small amount of fertilizer. In 1853, for instance, the company produced just 10,157 barrels of poudrette, which could at best fertilize about 5,000 acres. By the time the city had introduced an extensive sewer system at the end of the nineteenth century, any hopes for revisiting poudrette

were flushed away. The poudrette market declined even in France, where the reliability and ease of using commercial fertilizers made the repurposing of human waste less and less attractive.⁵²

Poudrette also failed to solve urban woes. Poudrette or no poudrette, New York's infrastructure was unable to handle the volume of human waste it produced, and the consequences were dire. When waste was stored in unreliable privies and cesspools, it seeped into the local water wells, which in turn fueled cholera epidemics. The poudrette companies could hardly solve these larger, systemic problems. If anything, the solutions provided by the private poudrette companies may have delayed the city's adoption of new publicly funded infrastructure that might have helped to prevent future epidemics.⁵³

Cholera Returns

Cholera revisited New York in 1849, despite the new supply of water and attempts to control the city's waste. On May 15, an Irish-American family living at 20 Orange Street, in the heart of Five Points, was struck by the disease. The City Inspector and local physicians visited their home to verify, and were horrified by the conditions they found in the neighborhood. Not only were the streets a mess, but so were the apartments. The *Tribune* noted that the families had no bedding, while the *Herald* went further: the inhabitants "were in regular debauch—without food, and subsisting only on the diluted and poisonous liquid sold in that vicinity." As with the 1832 outbreak, anxious citizens took solace in their supposed moral and financial superiority to the cholera victims. Repeatedly, newspapers and health officials noted that those most affected were not only poor but had bad hygiene, dirty homes, and intemperate habits. Cholera once again found a favorable setting in the marshy areas, such as Five Points, where bad drainage combined with dense housing. It was no coincidence that the poorest New Yorkers lived in these unattractive environments. The greatest victims of the uneven municipal response to sanitation were in these neighborhoods. Still,

those from other neighborhoods wagged their fingers at the immigrants and African Americans who called these blighted communities home, finding the source of their downfall in their lifestyles.⁵⁴

The city government again mobilized to calm the fears of its citizens. Despite having months to prepare—cholera had been spotted on the quarantine grounds six months earlier but had not spread—city officials only belatedly took steps to institute public health measures after doctors confirmed the cases on Orange Street. The Board of Health's "Sanatory Committee" appointed the aldermen and assistant aldermen of each ward as health wardens to increase effectiveness, since the representatives knew their neighborhoods well. Some politicians likely used this increased power for their ward's benefit, while others used it as a political tool to benefit favorites by overlooking noxious industries or residences of the politically powerful.⁵⁵

Based on their past experience in 1832, members of the Sanatory Committee immediately knew that they had to focus on sanitation. The newspapers reinforced this awareness. The *New-York Tribune* chided the city government for not having achieved better sanitation. Although New York was located between two rivers and had "the whole volume of the Croton flowing through our streets to wash us clean," it was still the dirtiest city in the country. "Dirt and garbage of all varieties accumulate in our thoroughfares, and in the poorer quarters, such as Elm-st. Orange-st. Mulberry-st. The heaps of matter thus collected sometimes cause the streets to resemble a Western bog-road rather than the avenues of the American metropolis, while the stench from decaying substances is overpowering, except to the habit or the resolution of a native. Now, this is shameful at all times, and at all times a source of danger." Despite the rush to clean the city after the 1832 outbreak, and despite the hubbub surrounding the introduction of Croton water, New York's streets remained a mess. As one New Yorker put it, the city, though improved, was "still quite too much of a slattern." After the previous decade's panic had subsided, the aldermen had not continued to allocate the necessary funds for street cleaning, and familiar problems had returned.

Piles of manure and other waste persisted on the streets and docks. City Inspector Alfred W. White assured the government that he had enlisted "gangs of men" to clean the city's streets that May, in order to make up for the city's transgressions. These gangs went through the "infectious district," whitewashing and purifying what they could with chloride of lime. The Croton water supply was not sufficient, however, to flush the streets of the city. Just three days after the first case of cholera was confirmed, City Inspector White contacted the president of the Croton Board, hoping to get full access to the supply of water in the reservoirs. The board denied the request, claiming that the reservoir levels were too low. Inspector White disregarded this and used the water to flush out Five Points. While the better supply of water in 1849 perhaps lessened the severity of the cholera outbreak, it was still insufficient to protect or even fully cleanse the city.⁵⁶

In a hurried attempt to rectify the city's health issues, the City Inspector and Sanatory Committee targeted the "nuisances" that had long been politically thorny: pigs, manure, noisome industries, and cemeteries. City Inspector White had been struggling with these "nuisances" for years, but the cholera epidemic of 1849 gave him the power to truly take control of the city's public spaces. Just two days after the first death was confirmed, the Sanatory Committee called on the police to demand that all hog owners remove their swine within twenty-four hours. On Orange Street alone there were pens containing 160 hogs, "the stench from which in so confined a locality is enough to produce a plague of deadly form," according to the *New York Herald*. After decades of struggling to gain control of the city's notorious hogs, the government was finally acquiring the political support necessary to get the job done. Not everyone was thrilled, however. While the press did not report on any riots or protests from hog owners, objections came from residents on the outskirts of the city, where owners and police deposited the refugee swine. The citizens of the Twelfth Ward, along with their representatives, fought to extend the anti-hog law to their neighborhood. When cholera struck that area particularly hard later in the summer, calls for change

grew louder. Horace Greeley, editor of the *New-York Daily Tribune*, who had recently lost his son to cholera, erroneously blamed the epidemic on the arrival uptown of "twenty thousand hogs." While hogs would temporarily remain in the outer reaches of the city in large, penned properties known as "piggeries," they would no longer roam the streets of New York in the same way they had for centuries. Cholera had sealed the hogs' fate.⁵⁷

The city also targeted the manure heaps that had long graced the docks and vacant lots of the city. Worried about the miasmas rising from these piles, City Inspector White sought to dump the material in the rivers or remove it by boat. The *Herald* railed against the city government for not arresting the manure dealers who stored their product in vacant lots. Police had a hard time identifying who owned the manure, a failing that the paper found unacceptable: "If ever there was a confession of imbecility in a city government, this is. What are the police good for, if they cannot find out the names of the parties guilty of accumulating such a huge plague spot as that under their nose?" The city also ran into trouble when, on one occasion, the officers in charge of removing the manure "were assaulted, the carts seized and driven off, and a scene of riot produced." Apparently, the manure dealers came out to resist the government's attempt to remove their property. Despite the outcry against manure and in defense of public health, it would continue to be a difficult issue for the government to tackle because of the extensive monetary benefit to manure contractors as well as the government.⁵⁸

The City Inspector and the Sanatory Committee also had their eye on noisome industries and practices that were long assumed to be dangerous to public health, especially those that created offensive smells or waste. Inspector White closed the various bone- and flesh-boiling establishments in the upper wards, where poorer residents boiled all types of animal matter as well as edible garbage found on the streets so that they could feed their hogs or sell the products to various industries such as soapmakers, tallow chandlers, and sugar refiners. The fact that

these industries were located in the low-density outer wards, where cholera hit unexpectedly hard, led to their demise. Reformers blamed them, along with refugee pigs, for all of the wards' problems. Finally, Inspector White also targeted cemeteries as a source of pestilential disease. While the city government was able to close the urban cemeteries during the epidemic, White believed that permanent closure was the only solution for avoiding further epidemics. He complained that the urban cemeteries were so full that it was impossible to bury anyone without disturbing someone else's decaying remains—a sure way to spread pestilence through the neighborhood.⁵⁹

The panic that cholera caused among New Yorkers allowed sweeping changes to take place. The municipal government boldly flexed its power to remove the malodorous industries and pests they had had difficulty dealing with in the past. Their motivation for these structural changes to the city government was not a fear of immigrants and newcomers, as some scholars have argued. Rather, vast urbanization, relatively frequent, devastating epidemics, and the fear that resulted gave cities the tools and infrastructure necessary to tame the urban environment. Yet they did not do so without hesitation. That July, in the midst of the outbreak, the Board of Health's Sanatory Committee defended itself against critics who claimed it was too slow in closing down noxious industries. Defining exactly what constituted a nuisance was tricky. The committee wrote: "It is not every thing that is offensive to the sight or smell that is really a nuisance. What is looked upon as such by one class of persons, is not so by another. It is not always so easy therefore to decide at once what is a nuisance, and how far the authorities are justified in removing or suppressing it." In addition, some of the most noisome factories employed hundreds of New Yorkers who depended on those wages for their "daily subsistence." The Sanatory Committee, the Board of Health, and the City Inspector were therefore not exerting their power without some thought, often to the dismay of wealthier, panicked New Yorkers who wanted the city reformed immediately. The

aldermen also considered financially assisting business owners whose soap factories or tanneries were closed during the epidemic, although they often decided against this.⁶⁰

The 1849 cholera crisis highlighted the disastrous impact of the city's uncontrolled development. As the City Inspector wrote, "Our city is growing so rapidly that no portion can be said to be 'outside the wall,' and, in removing a nuisance from our own doors, we have no right to throw it before our neighbors." Extending the laws to allow nuisances only above a seemingly distant street would inevitably present problems for future generations as long as the city continued to expand up the island. In this period before the city had adopted and enforced zoning laws, officials struggled with how to achieve a fair and effective balance between the needs of the changing city and the uses of its land. At the very least, the laws needed to keep up with the city's growth. The *New York Herald* perhaps said it best: "The population has extended in that direction, but the Common Council are not keeping pace, either with the population or progressive spirit of the age." While it would have been almost impossible for the aldermen to prevent cholera's arrival on the city's shores, they certainly could have tamed its fury with better sanitation and infrastructure. Unfortunately, they tried to catch up in a moment of crisis when even their best efforts proved to be too little, too late.⁶¹

Though city officials attempted to exert more control over public space during the 1830s and 1840s, their grasp was only fleeting. By 1852, the city's newspapers were already complaining about the state of the streets. That January, the *Tribune* teased: "Some of the workmen engaged in turning up the ice in Broadway yesterday came across a sort of fossil which seems to prove a fact which has been much disputed of late. The fossil was that of a brush broom, and apparently settles the point that at some past age the streets of New-York had been swept. The custom has,

however, been obsolete for some years." Whatever momentum had been gained by the cholera outbreak had dissipated. The reform that was so promising in 1849 seemed a distant memory once New York City's streets returned to their usual disorder.⁶²

Managing the city's waste required grander and more sustained efforts. The mix of public and private solutions to the city's issues caused ancillary problems that frustrated efforts to clean the city thoroughly. Private waste-management enterprises delayed the creation of necessary infrastructure. In retrospect, it is easy to look back on antebellum cities and romanticize arrangements that involved the remarkably efficient recycling of human and animal waste. But the reality was more complicated. The "organic city," with its privatized removal of waste, was a filthy, disease-ridden place. These early forms of recycling had serious consequences that were clearly recognized by New Yorkers of the era.

The cholera epidemics marked a turning point for the municipal government. Though reform and control were often fleeting, they did give the city government a sense of what was possible. Truly taming the city's filth required public solutions, not the cobbling together of private contractors who lacked proper oversight. Rather than just writing ordinance after ordinance in an attempt to control the urban environment, the government actively ensured the laws' enforcement. Out of necessity and panic, the city government extended and strengthened its power. Garbage disposal, traditionally a private affair, was increasingly becoming a public concern. City officials entered properties, whitewashed homes, and removed families and their livestock, all for the sake of public health. Protecting public health required controlling private as well as public spaces. Following a long history of passively managing streets, parks, and sanitation, the municipal government was beginning to take a strong hand in the public control of these public goods. With some effort and a touch of political maneuvering, perhaps New York could rise from its infamy as "the filthiest city in the United States" and even "the dung heap of the universe." Such progress, however, came with a price. The anxiety that pushed the city to clean the streets and make

the city healthier also drowned out the voices of hog owners and other New Yorkers who used urban space in a way that seemed to threaten public health and "progress." Yet, the economy of turning waste into valuable property did not end with the 1849 cholera epidemic. Political corruption allowed it to thrive, to the chagrin of many who hoped to transform New York into a healthier environment.⁶³

TAMING MANHATTAN

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