

Prologue

Exhuming Michael Galler

Late one night in New York City in June 1868, Dr. Marlin Dupuis was summoned to the home of Michael Galler. Galler was vomiting thick, darkly colored blood. Dupuis prescribed diluted sulphuric acid to kill the pathogen, whatever it was, that resided in his patient's gut. The doctor also prescribed a morphine elixir to help ease Galler's nerves. The next day Galler started to feel better, and, while the vomiting continued, it contained no blood. But two days later Galler felt exhausted and observed blood in his stools. Dupuis returned to Galler's home and this time prescribed ammonia along with a mixture of water, sulphuric acid, and champagne. After nearly two weeks, this course of treatment appeared to have a beneficial effect: Galler's mysterious illness disappeared, or at least the symptoms did.¹

Then, three to four weeks later, in July 1868, Galler had a relapse. He was again vomiting blood, his pulse was feeble, and he was running a high fever. Although Galler said he was not in any pain, Dr. Dupuis prescribed an opium elixir to be taken every two hours. Galler died sometime in early August, reportedly from a bleeding ulcer. A short time later, Galler's widow, Elizabeth, had him buried at the Lutheran Cemetery on Long Island.²

Michael Galler's death would have gone unnoticed by anyone other than his family and friends had it not been for Dr. August Wedekind. Three months after Galler's death, Dr. Wedekind went to New York police carrying a thousand-dollar bill Elizabeth Galler had given him. According to Wedekind, in January 1868 Elizabeth had come to his medical office and had explained that she was unhappy in her marriage and wanted to have her husband killed. She wanted the doctor to sell her

a poison that would kill her husband. Wedekind later testified that when he “indignantly refused” this request, Mrs. Galler asked him to keep their conversation private and promptly left his office. Wedekind did not hear of Mr. and Mrs. Galler again until November, when he visited another apartment in the building in which the Gallers lived. At that time Wedekind heard from a neighbor that Michael Galler had died a mysterious death from excessive vomiting.³

In his version of the events that followed, Wedekind claimed that when he learned of Michael Galler’s mysterious death he became suspicious and wrote a note to Mrs. Galler reminding her of their (alleged) conversation in January. Mrs. Galler responded promptly and arrived at Wedekind’s office on Orchard Street the very same evening. She came alone and offered to “pay well” if the doctor would keep quiet about all that he knew. When Wedekind said he would not hide his suspicions “for thousands of dollars,” Mrs. Galler said she would pay him a thousand dollars in hush money. Two days later, on the evening of Friday, November 12, Mrs. Galler and her brother-in-law came to Wedekind’s office bearing a thousand-dollar bill. She gave Wedekind the money and asked for a signed receipt in return. The next morning Wedekind went to Galler’s apartment, apparently to inform her that he was going to the coroner’s office with his suspicions and the thousand-dollar bill.⁴

A short time after Wedekind told officials his story, New York police had Michael Galler’s body exhumed. R. Ogden Doremus, a prominent New York chemist, then examined the corpse for the residue of poisonous compounds commonly used in homicides. Doremus tested specifically for organic poisons such as strychnine and inorganic poisons such as arsenic and corrosive sublimate, but he found none. The only other agents found in Galler’s body were morphine and lead. Trace amounts of morphine, which Galler had ingested on the advice of Dr. Dupuis, were found in the victim’s stomach and intestines. The lead, however, was dispersed throughout Galler’s body. It was found in a black substance that lined the stomach; it was found in the small intestines; it was found in the muscle tissue; and it was found in the liver.⁵

Was it possible that Elizabeth Galler had poisoned her husband using lead? While rare, it was not unheard of to use lead as a means of poisoning. For example, there were cases in which women tried to murder

family members by spiking drinking water and food with lead.⁶ But Doremus believed that the amount of lead in Galler's body was inconsistent with deliberate homicide. Based on the data reported in newspapers at the time, Galler's corpse contained less than a grain of lead. Autopsies of lead-poisoning victims typically revealed lead levels 3–10 times higher. Doremus also argued that while alive, Galler exhibited none of the more common symptoms of lead poisoning, such as paralysis, a blue gum line, and colic. Furthermore, if someone had tried to poison Galler, the murderer probably would have given the victim large quantities of lead over a short time period, and this would have caused all of Galler's fecal matter to become black with sulfide of lead. Because Doremus failed to observe such a result in his examination, he reasoned that the lead Galler absorbed must have been administered gradually, in small amounts spread over a long period of time.⁷

Following the autopsy, New York officials declared that Michael Galler "came to death from causes unknown to them." The coroner then issued a statement "honorably discharging" Mrs. Galler, even though she had never been formally arrested, and declaring that "there was not, in his opinion, the slightest suspicion against her." A few days later, New York police arrested Dr. Wedekind and charged him with extortion.⁸

But what exactly killed Michael Galler? Although there is no clear answer to this question, Ogden Doremus offered the following hypothesis to the reporters who interviewed him after he performed Galler's autopsy. According to the chemist there was enough lead in Galler's body to produce death if, in terms of overall health, "the patient was very low." As for how Galler had ingested the lead, the chemist could only speculate that since much of New York's water was "partaken through lead pipes" this was an "avenue through which" lead might have gained "access to the system."⁹

The possible link between lead water pipes and Michael Galler's death did not generate universal concern. In its reporting on the case, the *New York Times* said nothing about lead water pipes, and the paper's published accounts do not even include the comments by Ogden Doremus linking Galler's lead intake to the city's use of lead pipes.¹⁰ The *New York Herald* did consider the broader implications of Michael Galler's death, however, and raised these issues in an editorial shortly after the

autopsy: "On an analysis of the stomach of the deceased . . . no traces of organic, acid or mineral poison were discovered, but there were sufficient evidences of the poisonous action of lead, which . . . might be attributed to the use of [city] water." The paper concluded with a plea for the city to study the health effects of lead water pipes and to search for a safer piping material: "But what about the . . . lead pipes? Enough is now known to cause a scientific investigation to be made as regards to dangers arising from their use, and what other healthier . . . pipes can be substituted in their place. This is an important question, and ought to enlist the immediate attention of the Board of Health." As will be made clear, the *Herald's* plea elicited a limited response from the Board of Health.¹¹

The idea that lead water pipes contributed to Michael Galler's death raises at least two important questions. First, if Michael Galler had been exposed to unhealthy amounts of lead, why had his doctor failed to observe any of the more common symptoms of lead poisoning? On this score, one is tempted to challenge the competence of Galler's doctor, Marlin Dupuis. Perhaps Dupuis missed something important. By his own admission, Dupuis had never completed medical school, and the autopsy of Galler's corpse revealed no evidence of a bleeding ulcer, which Dupuis had originally identified as the cause of death. There was evidence that Dr. Dupuis was unable to write his own name. And a twenty-first-century observer cannot help but wonder about the so-called medicines administered to Galler: ammonia and sulphuric acid. But by the standards of 1870, Galler's medical treatment was not all that bad; most doctors at this time used chemicals like ammonia and sulphuric acid in an effort to reduce fevers and destroy pathogenic agents.¹²

Regardless of the shortcomings of Galler's medical care, it is possible to attach undue significance to the absence of a blue gum line, paralysis, and colic. Not all, or even most, adult victims of lead poisoning exhibited such symptoms. Even those prominent and wealthy enough to afford the best medical care were often ill for long periods of time before their physicians were able to uncover the true cause of their suffering. Consider the death of R. Milton Speer in 1890, a former Congressman and important member of the Democratic Party. According to accounts in the popular press, Speer "had been suffering for a year with a nervous disease which baffled the skill of physicians." Only toward the end of

his life was it discovered that the disease “resulted from lead poisoning due to drinking water which had long stood in lead pipes.”¹³

Second, is there evidence to suggest that Michael Galler’s tap water contained unduly high lead levels? The published accounts of Galler’s autopsy and the finding of significant lead in his system prompted New York authorities to conduct a few suggestive experiments. In the most revealing of these experiments, the chemist for the Metropolitan Board of Health tested the tap water in his own home for lead. He found that it contained 0.11 grains per gallon, or 1.88 parts per million (ppm).¹⁴ To put this in perspective, the modern EPA standard states that tap water should contain no more than 0.015 ppm—the chemist’s tap water had lead levels that were 125 times greater than the current standard. Unfortunately, it is difficult to know how representative the chemist’s tap water was of other households in New York City, and for reasons known only to the Board of Health, no broader, systematic study of lead levels was undertaken. Perhaps other household taps carried less lead, perhaps more.

The next time published data on lead levels in New York’s water supply appeared was in 1936, more than half a century after Michael Galler’s death. In this case, two researchers at Long Island University ran several experiments to estimate the amount of lead New York City water would dissolve from the interior of water pipes. From today’s perspective, their findings are startling. When New York water was allowed to remain in service pipes for more than a few days, it would have routinely dissolved enough lead so that water from taps contained about 4 ppm, 267 times the EPA standard and 40 times the level recommended by the United States Public Health Service in 1936. In light of these findings, the *New York Times* ran a very short story in which it recommended that homeowners in the city flush their pipes when returning home from summer vacations. The story was printed on page 21.¹⁵

New York City did not take any steps to reduce lead levels in its water supply until 1992, 123 years after Michael Galler’s death. In that year, the city began treating the public water supply with chemicals to help limit the amount of lead leached from the interior of old water pipes.¹⁶ The city’s decision to treat its water took place long after the most serious damage had probably already been done. By 1992, there were relatively

low lead levels in New York City tap water, at least by historical standards, and there were only a handful of buildings in the city whose levels exceeded federal guidelines. The reasons for this are simple. Over the course of the nineteenth and twentieth centuries, much of the old lead pipe had corroded away and had been replaced with pipe made of polyvinyl chloride (PVC) or iron, while the lead pipe that remained had developed a protective coating on the interior of the pipe. As a result, in 1992 (prior to water treatment) the building in New York City with the highest lead level in its tap water exceeded the modern EPA guideline by only a factor of 3. In contrast, the statistics cited earlier indicated that between 1870 and 1940, lead levels in New York tap water exceeded the modern EPA guideline by a factor between 100 and 200.¹⁷

Unlikely Patterns

Michael Galler's death was not the first time people associated a mysterious illness in New York City with the use of lead water pipes. Such associations began in 1848, when New York City finished construction of the aqueduct bringing water from the Croton River in Westchester County to the city. At forty-one miles long, the Croton aqueduct was described as a "sublime engineering feat" that promised to bring the city an unending supply of pure water, free from the taint of disease. Prior to the introduction of the Croton water supply, residents had to rely heavily on surface wells scattered throughout the city. Surface wells were often polluted by nearby privies and cesspools, and were therefore an excellent breeding ground for cholera and typhoid.¹⁸ Because water from the Croton River was largely free of such bacteriological pollution, its introduction helped reduce outbreaks of these and other waterborne diseases. The annual death rate from typhoid fever fell from 6.1 deaths per 1,000 persons before the introduction of the Croton water supply to 2.6 immediately afterward, a reduction of more than 50 percent.¹⁹

But soon after the Croton water was brought to the city, some physicians began "observing anomalous derangements of the system, and obscure neuralgic arthritic and gastritic affections [sic]." The symptoms appeared consistent with "the slow action of a metallic poison [and] could not be referred to any" source other than water.²⁰ Dr. Chilton, a

chemist, recounted an example when he had been called to examine the water taken from leaden pipes in a house in the city. Several people in the house had become “seriously ill,” and Chilton found lead in the water. According to Dr. Chilton, “the effect of lead from drinking of Croton water under such circumstances, is of frequent occurrence, but not recognized as such by the physicians, or rather not attributed by them to the true cause.”²¹ Although Chilton was a chemist and not a doctor, subsequent observers also claimed that physicians were underdiagnosing the frequency of water-related lead poisoning in the city.

In 1851, George H. Kingsbury, a New York City physician, published a short article in *The New York Journal of Medicine*. Kingsbury described four cases of lead poisoning he had recently treated. In each of the cases, the doctor traced the source of the poisoning to lead-contaminated tap water. The first case involved a middle-aged physician living in the city who had been suffering from an odd constellation of symptoms, including severe abdominal pain, constipation, jaundice, nausea, diminished appetite, rapid weight loss, sleeplessness, and irritability. The patient had visited prominent physicians throughout the city in search of a diagnosis and cure. One thought he had cholera, another thought “biliousness” (liver problems), and another suggested the patient was a hypochondriac. Eventually, one doctor discovered a blue gum line in the patient’s mouth, a telltale sign of lead poisoning, and suggested the patient discontinue his use of city tap water. The patient’s condition quickly improved after he stopped drinking city water, but returned when the patient, who had not fully believed the diagnosis, began drinking tap water again.²²

Kingsbury’s article failed to convince the broader medical community in New York City. Two years after Kingsbury published his article, the Academy of Medicine met in New York City. An entire session was devoted to a discussion about lead levels in New York City tap water. The session was opened with the comments of one Dr. Joseph M. Smith. After reviewing lead’s many effects on the human system and various exposure vectors, Dr. Smith asserted that New York’s water was perfectly safe and free of harmful levels of lead. Most of the other doctors at the conference shared Smith’s view that Kingsbury was mistaken and that there were no cases of water-related lead poisoning in New York City.²³

The response of the New York Academy of Medicine, however, was tame in comparison to the rebuke Kingsbury received from Dr. Meredith Reese, the editor of the *New York Medical Gazette and Journal of Health*. Sarcastically describing Doctors Kingsbury and Chilton as “medical savants,” Reese claimed his colleagues suffered “under a monomania on the subject of lead poisoning.” Reese then characterized Kingsbury’s patients as hedonists whose illnesses stemmed mainly from too much food, drink, and sex. “We have known some of them,” Reese wrote, “to ignore the effects of high living, generous wines, and still more mischievous excess in sensual indulgence as sources of disease.” While not all of Kingsbury’s patients took hedonism to extremes, those who did not were “noted hypochondriacs.”²⁴

One summer night in 1861, twenty prisoners confined in the Kings County Jail in Brooklyn began vomiting uncontrollably. Over the next few days, another thirty or so prisoners developed the same fits of vomiting. The jailhouse physician, Dr. Charles Van Zandt, was summoned and after a few hours of puzzlement came to the conclusion that the jail’s water, which was transported via a long lead pipe, had become impregnated with the metal and was poisoning the prisoners. He ordered the jail supervisors to find a new water supply immediately and to replace the lead piping. The inmates quickly recovered once they stopped drinking the tap water. A few days later, a worker at the jail who could not believe that the prisoners had been poisoned merely by drinking from the jail taps, “drank plentifully” of the water in a loud “spirit of bravado.” In a few hours, he too fell violently ill and began vomiting uncontrollably.²⁵ Although no one in New York in 1870 seems to have remembered this incident, the sickness that had afflicted the prisoners in 1861 bore a striking similarity to the one that attacked Michael Galler eight years later.