A Challenge for Greene County:
The Cholera Epidemic of 1832

by

Karla Flegel

The most fearful epidemic of the nineteenth century was cholera. This disease was known for its 50 to 80 percent mortality rate. Death occurred two to eight hours after the onset of severe vomiting and diarrhea to the extent that women spontaneously aborted their pregnancies.

Cholera is spread by drinking contaminated water. Originating in India in 1817, it was spread by tradesmen who traveled on foot as well as by sea, penetrating almost all of Europe by the spring of 1832 and then crossing the Atlantic Ocean. Unable to control its spread throughout Europe and North America, most watched its destructive paths helplessly while others fled to what they believed to be safer areas.

This article, with a focus on the happenings within Greene County, captures the general reactions to the epidemic and then traces progressive measures to prevent its reoccurrence. Building on the European discoveries and what happened in America, this article illustrates Greene County's determined and successful efforts to decrease water-borne disease risks by developing and upgrading adequate clean drinking water sources.

Cholera Arrives in New York State

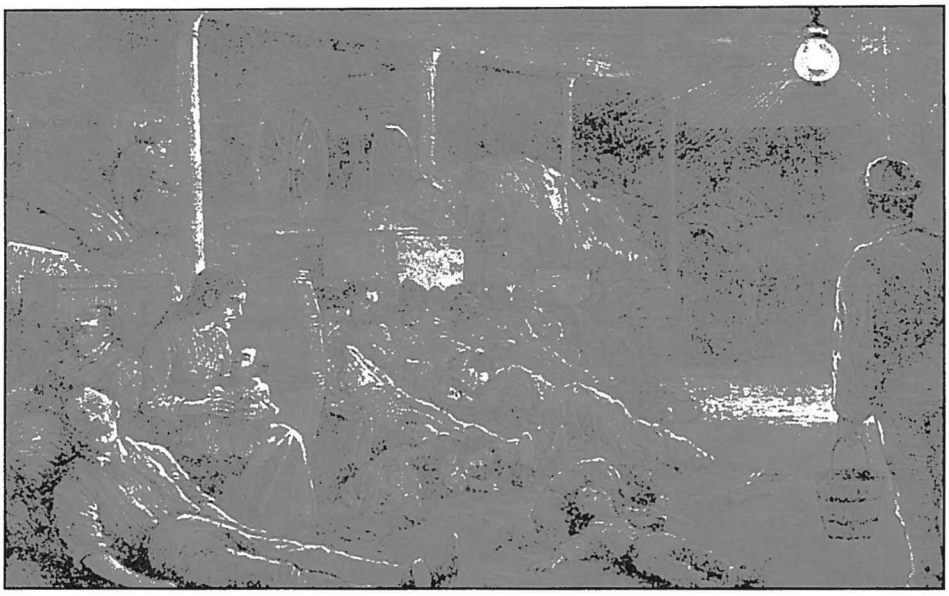
Prior to the Cholera Epidemic of 1832, Greene County residents had created unique life styles by adapting to the social practices of New York City, blending European traditions with their own and sharing knowledge and beliefs with those who settled in or traversed the county. Population development grew along clean gravitational springs, ponds and the Hudson River.

The villages of Catskill and Coxsackie required additional water sources to serve their growing populations. In the early 1800s, Catskill village residents received their water through hollowed, yellow pine logs from the cold springs located within the present Spring Street area. At about the same time, the village of Coxsackie received clean water through a three-mile long, underground, hollowed chestnut log line from a stream in Climax.

Rainwater cisterns also served as sources for clean water. Thriving within their developing rural lifeways, many, although aware, expressed minimal concern about the epidemic rampage throughout Europe.

Beginning in April 1832, the county newspaper, the Catskill Recorder, printed weekly updates about the impact of cholera in Europe. Its weekly reports, widely distributed throughout the area, cited increased death rates in the "worst areas" within "progressive civilizations." On April 26, 1832 the Catskill Recorder reported that 2,213 Londoners had succumbed to cholera in one month after the epidemic entered their city; and on May 31, 1832, the paper added that 850 cholera-related deaths had occurred within a two-week period in Paris. Shortly after, it compared the epidemic death rates in Europe to those of the fourteenth century Black Plague, which killed one fourth of the European population.

Throughout April and May, the newspaper characterized cholera as "rampaging destructively" and as being the most "dreadful ... fearful ... most miserable ... tortuous disease leading to great suffering and agonizing deaths." Then, turning its attention to Greene County, the June 26th edition proclaimed that the Catskill Mountain House, located "above the reach of the pestilence" within the "clean mountain air above the clouds" was the safest area in the region.



Fear of the victims and ignorance of the manner of cholera's transmission caused many of the infected to die in pain, abandoned by their families, surrounded only by other victims. (Courtesy New York Historical Society)

Although specific concerns and impressions of the county residents remains unknown, the Greene County residents, like the average North American, felt protected from the epidemic by the vast distance created by the Atlantic Ocean.

But then, with a sense of urgency, the June 21, 1832 edition of the Catskill Recorder proclaimed that cholera had "gained a foot hold" on North American soil on June 6. It alerted the county by tracking cholera's entry through Montreal, and reporting cholera-related deaths in Mechanicville on June 14 and in Whitehall on June 18. Then the June 28, 1832 edition reported that cholera-related deaths had been reported in New York City on June 22.

On June 15, 1832, the day after the Mechanicville deaths, New York State, in response to the presence of cholera in Canada, issued emergency measures to institute "every precaution the human mind can suggest." The measures included the need to control the spread of cholera, to attend to those who were already inflicted, and to protect all from future occurrences. In addition, being aware of the high death rates in Montreal, the governor blocked all transportation between Canada and the U.S. and mandated the formation of Boards of Health in every city, town, and village to enforce the new regulations against the spread of cholera and to offer immediate treatment in the event the disease should strike.

New York City's Response to the Crisis

New York City had been keeping abreast with England's progress, but focused more on its industrial expansion then on the well-being of its inhabitants. As in England, the New Yorkers inhaled foul vapors emitted from decades of accumulated garbage, sewage and decaying animal corpses covered with crawling rodents and insects. Dug wells, located along the street sides, provided drinking water polluted by draining sewage. For most, this was their accepted way of life, and a cultural trait held within their European heritage.

New Yorkers initially did not anticipate what they were about to experience. Great fright and alarm soared when they learned that cholera was heading toward their

This illustration presents what we might consider a typical New York City neighborhood of the late 1820s. In fact, this is a representation of lower Manhattan's Five Points neighborhood in 1827. That was five short years before the first cholera epidemic entered New York State. Though Five Points would later become notorious in its own right for the savagery of its gang violence, the sheer numbers of cruel deaths caused by cholera certainly does not lag far behind. (Courtesy New York Historical Society)

city, and then more so as it swept rapidly throughout the area with great intensity. About one third of the population fled the city while spreading cholera to Long Island, New Jersey and areas of upper New York State.

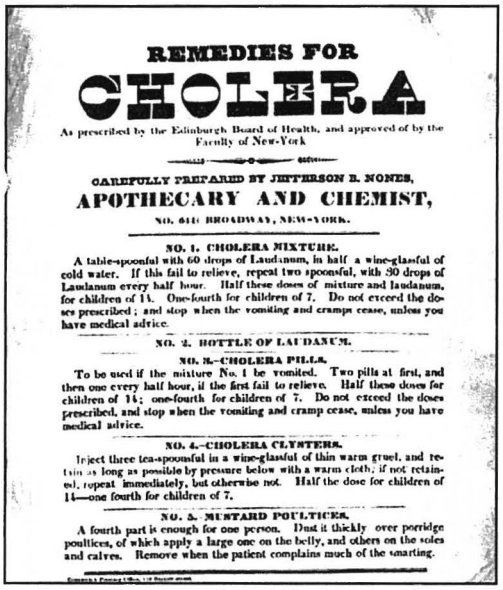
New York City's Board of Health attempted to control the spread of the disease by taking actions similar to those of their European colleagues. The board, comprised of experienced physicians, demanded all residents improve their personal hygiene practices, clean their homes and remove trash and wastes from their streets. But with the exception of dumping refuse in the nearby rivers and ponds that served as water sources, how and to what degree these requirements were completed remains unknown.

They used their authority to quarantine all ships for at least fifteen days, and accepted the task of cleaning the slum areas. The board also required physicians to treat all who suffered from the disease, and to report every cholera-related disease and death as soon as possible. However, experiencing feelings of helplessness and dread intensified by their limited knowledge about cholera, physicians became overwhelmed to the point they were only able to tally the reported numbers of deaths.

As the statistics grew, they found that the numbers peaked in mid-July and then lessened with what was thought to be caused by decreases in population densities leading to cleaner air. Meanwhile, experiencing great exhaustion and fear, many Board of Health members and physicians fled to safer areas while their remaining colleagues struggled to gain control as death rates decreased and then ceased altogether during the onset of colder weather.

By mid-September, more than 3,500 known deaths were attributed to the epidemic that frightened the city's 250,000 residents. The inclusion of the daily average of 100 cholera-related deaths in the slum areas remains questionable. From another point of view, if this epidemic swept through New York City today with the same powerful force as it did in 1832, the city's equivalent death toll (based upon today's eight million residents) would be greater then 100,000 within a three month period.

The decisions underlying the treatment and control of cholera's spread displayed the early European faith beliefs. Being aware of the rising death rates in the slum areas, many Americans believed that cholera had been sent by God with the intention to punish those sinners who neglected their gift for life. More specifically, those who abused their gift for life through alcoholism, malnutrition, prostitution and existence in filthy areas,



REMEDIES FOR

CHOLERA

As prescribed by the Edinburgh Board of Health, and approved of by the Faculty of New-York

CAREFULLY PREPARED BY JEFFERSON R. NONES,

APOTHECARY AND CHEMIST,

NO. 644 BROADWAY, NEW-YORK.

NO. 1. CHOLERA MIXTURE.

A table-spoonful with 60 drops of Laudanum, in half a wine-glassful of cold water. If this fail to relieve, repeat two spoonsful, with 30 drops of Laudanum every half hour. Half these doses of mixture and laudanum, for children of 14. One-fourth for children of 7. Do not exceed the doses prescribed; and stop when the vomiting and cramps cease, unless you have medical advice.

NO. 2. BOTTLE OF LAUDANUM.

NO. 3.—CHOLERA PILLS.

To be used if the mixture No. 1 be vomited. Two pills at first, and then one every half hour, if the first fail to relieve. Half these doses for children of 14; one-fourth for children of 7. Do not exceed the doses prescribed, and stop when the vomiting and cramp cease, unless you have medical advice.

NO. 4.—CHOLERA CLYSTERS.

Inject three tea-spoonsful in a wine-glassful of thin warm gruel, and retain as long as possible by pressure below with a warm cloth; if not retained, repeat immediately, but otherwise not. Half the dose for children of 14—one fourth for children of 7.

NO. 5. MUSTARD POULTICES.

A fourth part is enough for one person. Dust it thickly over porridge poultices, of which apply a large one on the belly, and others on the soles and calves. Remove when the patient complains much of the smarting.

The City of New York was impressive in its efforts to contain the epidemic. Here we see a poster created by the Board of Health in Edinburgh Scotland, and "approved" for use in the City. Unfortunately, the listed "remedies" were only stabs in the dark, attempting to alleviate physical symptoms, as both the cause and mechanism for cholera's spread was still unknown at that point. None of the listed "remedies" would have any effect on the disease - though ingesting Laudanum would certainly allow you not to care either way. (Courtesy New York Historical Society)

experienced intense suffering and high death rates. These observations reinforced beliefs that cholera was spiritually induced. This in turn guided decisions to let these victims die. However, not all held this belief. Others claimed that humans do not know God's true intentions and in turn, blamed society for allowing these deplorable lifestyles.

Observing a decrease in the incidence of cholera following a degree of waste removal, a small group believed cholera occurred through contact with soiled articles; however, most held onto the European belief that cholera was spread by inhaling the stench vapor emissions within the filth-ridden streets. That belief, in turn, dominated the rationales for preventing the spread of cholera in North America up to the mid to late 1800s.

Greene County's Reaction to the Crisis

Greene County, sharing the cultural beliefs and responses to the cholera terrors, attempted to block the diseases' entry by enforcing "every possible precaution and preventive, measure," according to the Catskill Recorder. Hence, following the New York State mandates, it created Boards of Health in Catskill village, Catskill Township, Athens village, Athens Township, Coxsackie, New Baltimore, Greenville, Cairo and Lexington. Each board assumed responsibility for instituting preventive measures within its community.

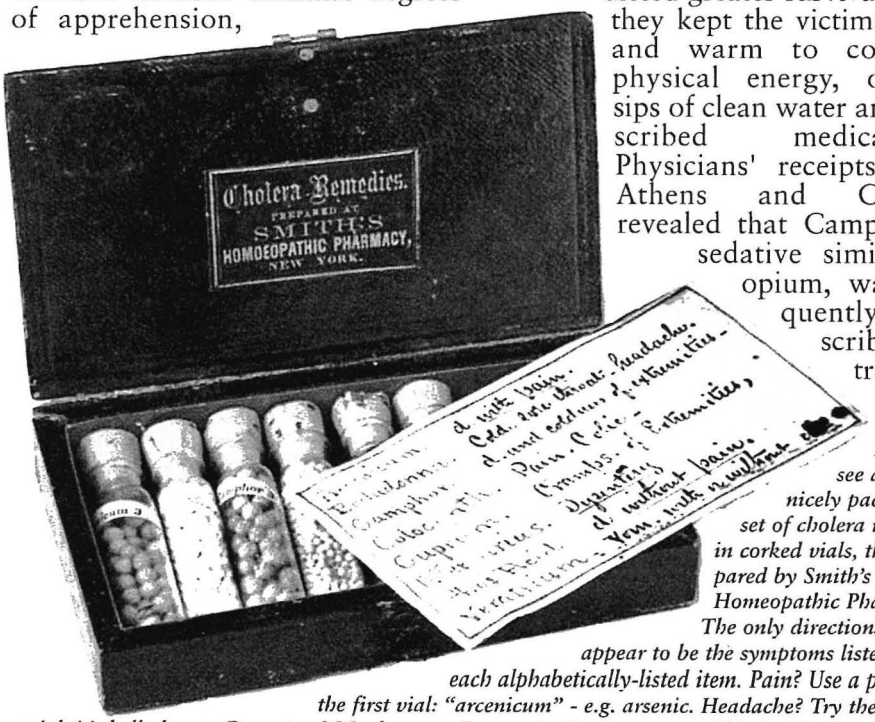
The Boards of Health ordered all physicians to learn the nature of and the treatment for cholera, provide access for clean water, and inform their community about treatment and preventive measures. They quarantined ships arriving from infected areas, and prohibited the crossing of individuals into other townships.

Documents illustrate Catskill's intentions to remove foul sewage-related odors by the removal of accumulated trash in streets and homes, and the closing of its slaughterhouse and buildings used to store drying herring. Data also illustrates Athens and Catskill disinfecting their villages by spreading lime throughout the streets and in the homes, and purifying their communities with heavy, black, choking smoke from burning tar pits.

Although the anticipatory interventions induced minimal degrees of apprehension, communities considered themselves to be protected by the county's spaciousness and clean living, and thereby responded calmly toward the possible crisis.

When, how, and from where cholera entered Greene County, remains unknown. County residents' overall feelings of safety dissipated when the Catskill Recorder reported that Athens had eighteen cases and thirteen deaths by August 23, 1832. Documents refer to the river towns as having experienced a significant number of outbreaks, with Athens having the highest, followed by Catskill, less in Coxsackie and lesser still in New Baltimore. The presence of cholera victims in Gayhead and in Cairo revealed the disease's inward sprawl in the latter part of the summer. Apparently, some of those who disembarked from ships following quarantine clearance, and who violated township crossings, carried the cholera microbe.

In retrospect, the air purifying methods and the lime distributions may have reduced flies but had no effect on the actual transmission of cholera. Physicians, not fully understanding the disease process, followed the treatment regimens used in New York City. Knowing that the early initiation of treatment predicted greater survival rates, they kept the victims quiet and warm to conserve physical energy, offered sips of clean water and prescribed medications. Physicians' receipts from Athens and Catskill revealed that Camphor, a sedative similar to opium, was frequently prescribed to treat the rest-



Here we see another nicely packaged set of cholera remedies in corked vials, these prepared by Smith's Homeopathic Pharmacy. The only directions for use appear to be the symptoms listed after each alphabetically-listed item. Pain? Use a pill from the first vial: "arcenicum" - e.g. arsenic. Headache? Try the second vial: it's belladonna. Dysentery? Maybe some "mercurius" - mercury - will help. The jaw-dropping toxic ingredients in such "remedies" could easily have increased the death rate during the epidemic! (Courtesy New York Historical Society)

lessness associated with the physical and emotional responses throughout the mid- to end- stages of the disease. Calomel, a mercurial based laxative was also prescribed. In addition, physicians practiced blood letting, also known as the bleeding of almost one cup of blood at a time to remove "impurities."

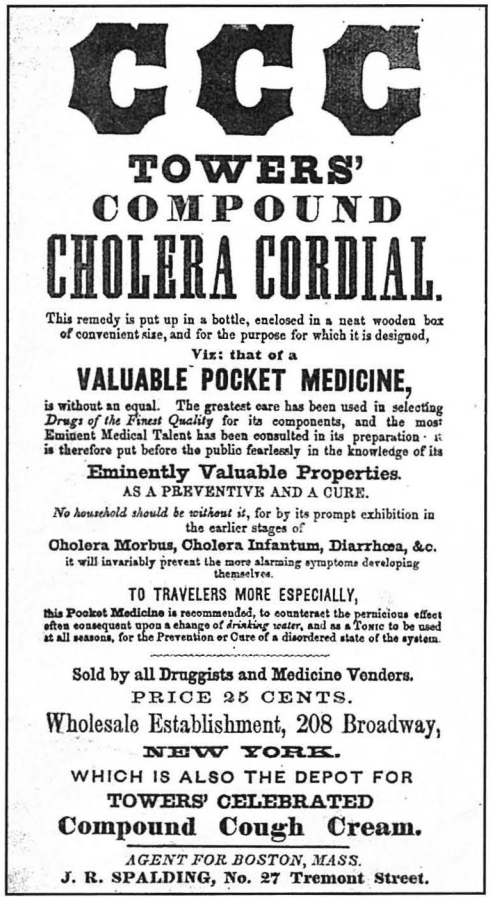
As physicians coordinated community efforts and attended to victims, they observed that individuals who had contact with the victims, entered the homes of the inflicted, or attended to the bodies, often succumbed to the disease. Experiencing great fright, a number of physicians and the clergy who attended to the victims, fled to and felt safer in the ambiance of the pure air and clean water of the Catskill Mountains.

With the exception of information found about a cholera hospital and a burial site, little is known about the severity of the epidemic in this area. In August 1832, documents and receipts for general equipment affirmed the county's construction of a hospital for victims who required additional care. Lacking data related to its function, size and location, yet aware that the United States followed European trends, leads us to envision this hospital as being similar to the cholera hospitals in Europe. From this perspective, the hospital may have been "filthy, over crowded and filled with agonizing screams and writhing victims lying close together, covered with flies and within the proximity of bodies stored for burial." This hospital, when no longer needed, was closed at the end of 1832 and dismantled in 1834.

The severity of the local epidemic is also revealed by the discovery of a large number of human bones just north of the county border, in an area identified as having been a cholera burial site in 1832. Cholera-related deaths peaked throughout the summer, decreased in the fall and then ceased at the onset of winter. At that point, believing they had accomplished their functions, the local Boards of Health accepted their discharge, only to resume their responsibilities when the county experienced its second epidemic in 1849 and then its third and most severe in 1853.

In later years, individual town boards acknowledged their need to continue the efforts of the Boards of Health, to protect the health of their residents by procuring and maintaining clean water access within their township commitments.

As Greene County recovered from the cholera invasion, New York City sought clean water for its growing population. For this, it built the gravity-fed Croton Aqueduct System, which was completed in 1842. This project led to the city's reputation as the "nation's urban trendsetter in long distance water storage and water delivery systems" – all of which served as a model for other areas. And then, recognizing the need to continue health protective measures through environmental improvements, the city constructed its sewage systems. That construction lasted from 1884 to 1891.



CCC

TOWERS'
COMPOUND
CHOLERA CORDIAL.

This remedy is put up in a bottle, enclosed in a neat wooden box of convenient size, and for the purpose for which it is designed,

Viz: that of a

VALUABLE POCKET MEDICINE,

is without an equal. The greatest care has been used in selecting *Drugs of the Finest Quality* for its components, and the most Eminent Medical Talent has been consulted in its preparation - it is therefore put before the public fearlessly in the knowledge of its

Eminently Valuable Properties.

AS A PREVENTIVE AND A CURE.

No household should be without it, for by its prompt exhibition in the earlier stages of

Cholera Morbus, Cholera Infantum, Diarrhœa, &c.

it will invariably prevent the more alarming symptoms developing themselves.

TO TRAVELERS MORE ESPECIALLY,

this Pocket Medicine is recommended, to counteract the pernicious effect often consequent upon a change of *drinking water*, and as a Tonic to be used at all seasons, for the Prevention or Cure of a disordered state of the system.

Sold by all Druggists and Medicine Venders.

PRICE 25 CENTS.

Wholesale Establishment, 208 Broadway,

NEW YORK.

WHICH IS ALSO THE DEPOT FOR

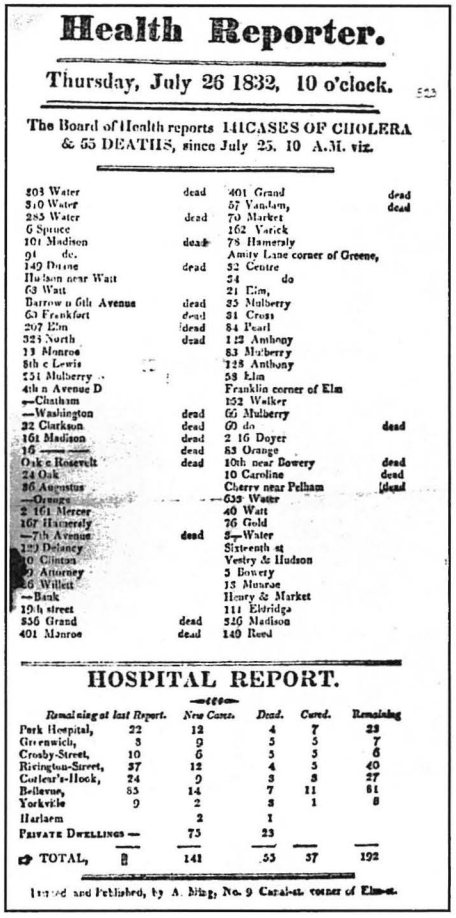
TOWERS' CELEBRATED

Compound Cough Cream.

AGENT FOR BOSTON, MASS.

J. R. SPALDING, No. 27 Tremont Street.

This flyer touts the benefits of "Towers Compound Cholera Cordial." While we are given precise details regarding the medicine's bottle, packed in a "neat wooden box of convenient size," we are only told that the compound contains "Drugs of the Finest Quality" - though it never gets around to identifying the specific drugs. The most interesting line in the ad is that it seems to stumble upon the connection between cholera and bad water. "TO TRAVELERS MORE ESPECIALLY, this Pocket Medicine is recommended, to counteract the pernicious effect often consequent upon a change of drinking water ..." (Courtesy Library of Congress)



Health Reporter.

Thursday, July 26 1832, 10 o'clock.

The Board of Health reports 141CASES OF CHOLERA & 55 DEATHS, since July 25, 10 A.M. viz.

303 Water	dead	401 Grand	dead
310 Water		57 Vandam,	dead
285 Water	dead	70 Market	
6 Spruce		162 Varick	
101 Madison	dead	78 Hamersly	
91 do.		Amity Lane corner of Greene,	
149 Duane	dead	32 Centre	
Hudson near Watt		34 do	
63 Watt		21 Elm,	
Barrow n 6th Avenue	dead	35 Mulberry	
63 Frankfort	dead	31 Cross	
207 Elm	dead	84 Pearl	
324 North	dead	142 Anthony	
13 Monroe		83 Mulberry	
8th c Lewis		128 Anthony	
251 Mulberry		58 Elm	
4th n Avenue D		Franklin corner of Elm	
—Chatham		152 Walker	
—Washington	dead	66 Mulberry	
32 Clarkson	dead	69 do	dead
161 Madison	dead	2 16 Doyer	
16 ——	dead	83 Orange	
Oak c Roosevelt	dead	10th near Bowery	dead
24 Oak		10 Caroline	dead
36 Augustus		Cherry near Pelham	dead
—Orange		639 Water	
2 161 Mercer		40 Watt	
167 Hamersly		76 Gold	
—7th Avenue	dead	8—Water	
129 Delancy		Sixteenth st	
10 Clinton		Vestry & Hudson	
29 Attorney		3 Bowery	
26 Willett		13 Monroe	
—Bank		Henry & Market	
19th street		111 Eldridge	
336 Grand	dead	526 Madison	
401 Monroe	dead	149 Reed	

HOSPITAL REPORT.

	Remaining at last Report.	New Cases.	Dead.	Cured.	Remaining
Park Hospital,	22	12	4	7	23
Greenwich,	8	9	5	5	7
Crosby-Street,	10	6	5	5	6
Rivington-Street,	37	12	4	5	40
Cutler's-Hook,	24	9	3	3	27
Bellevue,	85	14	7	11	81
Yorkville	9	2	3	1	8
Harlaem		2	1		
Private Dwellings —		75	23		
☞ TOTAL,	8	141	55	37	192

Printed and Published, by A. Bing, No. 9 Canal-st. corner of Elm-st.

This is a copy of a report apparently published daily in New York City at the height of the epidemic. Over the span of a mere 24 hours, 55 deaths and 141 new cases of cholera were reported. The most interesting thing to note in this report is that the City was already listing the instances by address, which would ultimately allow them to pinpoint the affected neighborhoods and begin to align living conditions to the number of cases. (Courtesy Library of Congress)

Working Toward an End to Cholera

From the mid 1830s through the 1840s, England had experienced frequent re-occurrences of cholera epidemics and had sought different methods to control its spread, especially throughout its larger cities. Observing the patterns of the cholera spread, Chadwick, the Sanitation Commissioner in

London at the time, declared that cholera outbreaks were caused by atmospheric impurities emitted from excessive filth within the denser city populations. Based on this, he created a Board of Health to promote and maintain clean environments by prioritizing clean water access and enhanced sanitation measures. This was followed by his innovative approach to perfect the use of flush toilets, which drained into glazed earthenware sewage pipes.

In addition to this, having observed the decrease in cholera-related incidents in areas receiving filtered water, Chadwick arranged to have filtration systems installed throughout London. Chadwick described the beneficial effects of preventive measures and his findings were circulated and accepted throughout Europe and North America. Research to identify, and then neutralize, the true cause of cholera proceeded from the 1850s through the 1880s. The discovery of the microbe (later christened Vibrio cholorae) confirmed the falseness of the old traditional beliefs and, in turn; offered a scientific base for Chadwick's progress.

As early as 1854, Dr. Snow had learned that ingesting contaminated water caused cholera and that this incidence was greatly reduced when chlorine was added to the public drinking water. Acknowledging this, England began chlorinating all public drinking water, which was pumped from clean water sites.

Building upon Dr. Snow's work was Dr. Louis Pasteur in France. In 1865 Pasteur, having discovered the cholera-causing microbe in contaminated water, verified that drinking clean water prevented cholera. Delving deeper Dr. Koch in Germany identified the cholera bacillus. Working from 1854 to 1880, Dr. Pacinni of Italy discovered the bacterium, which he named Vibrio, identifying both its cause and its method of transmission. His findings, accepted by the scientific community after his death in 1883, affirmed the validity of the discoveries of Drs. Snow, Pasteur and Koch.

Together, these findings served as a foundation for the study of microbiology and the use of scientifically-based protective rationales for clean drinking water throughout Europe and North America.

Greene County's Efforts to Develop Clean Water

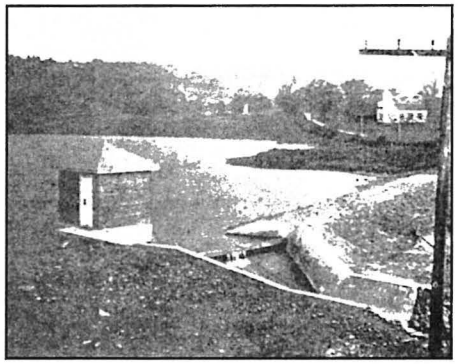
During the 1870s and early 1880s, the need for clean water resonated across Greene County and intensified in those villages that outgrew their reserves. Their demand for access to pure water similar to that of the cholera-free Catskill Mountains may have resulted from the blending of an ongoing fear of another cholera epidemic, the recognition of the European discoveries, and New York City's provisions for its clean water. Clean water became crucial for villages that experienced increases in their populations, industrial pursuits, indoor plumbing, and the increased need for adequate fire protection. Communities also voiced concern for a level of sufficiency for clean water throughout drought and anticipated population increases.

Within time, the town boards listened to these requests, shaped by their interests to protect the health of their communities. The process for acquiring clean water access by the larger villages, Coxsackie, Athens, and Catskill, required years of collaboration, delays, decisions and agreements within their unique geographical locations. Delays centered primarily on construction and maintenance costs. These villages, needing several years to agree on clean gravitational flow sources, resorted to pumping water from the Hudson River – despite the fact that they were fully aware that the Hudson was being polluted by upstream population growth.

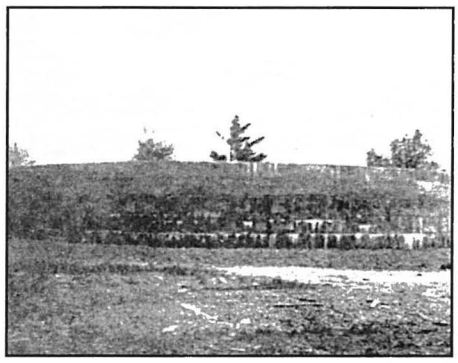
Coxsackie pumped water during shortages caused by extended periods of dry weather. Athens considered pumping river water throughout the late 1800s. Catskill, recognizing its urgent need for additional clean water, built a pumping station and the Hamburg Reservoir (also known as the Spring Street Reservoir) between 1885 and 1890. This served Catskill Village with river water through the 1930s.

Although the use of river water was initially acceptable, questions concerning the potential effects of the water quality on the health of their communities, accentuated the determination of each of these villages to move forward toward access to safer water. Starting in the late 1800s and continuing into the early 1900s, the larger villages emulated New York City's solution and constructed water reservoirs using gravitational flow systems.

Beginning in 1880, Coxsackie Village began increasing and perfecting its adequate water sources. In 1899 Coxsackie constructed the Morgan Dam behind Roberts Hill, taking great pride in its underground water mains, efficient serv-



Hollisters Lake was first identified as a potential water source for Athens Village, in 1908. During construction, the level of the lake was raised about seven feet, allowing a capacity of 75 million gallons. A six-inch cast-iron pipe brought the water to the distribution reservoir. The final step before leaving the lake was the chlorination of the water, which took place at the gate house in the picture. Image from "Athens: Its People and Industry, 1776-1976." (Courtesy Athens Bicentennial Committee)



Constructed of concrete, the reservoir in Athens was located on Clark's Wood Hill, and sat 90 feet across, with a height of 18 feet. Estimated capacity was 75 thousand gallons. The reservoir also had an aerator, designed to spray the water into the air. The aerator functioned to help reduce the taste of the chlorination. Image from "Athens: Its People and Industry, 1776-1976." (Courtesy Athens Bicentennial Committee)

ice to the Village, and expanded fire protection. By 1918, however Coxsackie needed to increase its clean water supply, and constructed the Climax Reservoir.

By 1885, Athens Village had begun intermittent discussions of its options for procuring clean water – as well as the need for adequate funding. In 1908, that community agreed on the Hollisters Lake site as a future water source... but still kept searching for other options. Finally, after extended discussions – and after garnering adequate funds – Athens agreed on a plan and began construction of the Hollisters Lake Reservoir and the attendant water distribution systems in 1926. Construction was completed in 1927.

By 1890 Catskill Village, questioning the safety of the river water, reached an agreement to construct the Potic Reservoir, although the actual construction did not begin until 1920. Extended collaborations both preceded and continued throughout the construction, which was completed in 1930.

Throughout all endeavors, the depths of the collaborations and reactions to the many struggles that finally led to these villages procuring clean water, remain evident, although vague. On the other hand, historical accounts of the achievements for clean drinking water and adequate water for fire prevention, depict celebrated victories for what the three villages claimed to be their "finest ... cleanest ... best tasting ... superior ... outstanding quality ... purest drinking water."

While the larger villages sought gravitational-flow sources, smaller communities concentrated on obtaining and preserving their clean water from stone-lined wells, springs and rainwater cisterns, and had an increasing interest in controlling waste management. Town boards across the county monitored and guided residents' interests in and steps toward improving and preserving clean water by decreasing the risk potential from upstream agricultural, industrial and population contaminants seeping into their drinking water sources.

Throughout the years when the larger Greene County villages were planning and developing clean water sources, cholera epidemics and sporadic cholera outbreaks continued to sweep across the nation. From 1851 to 1865, epidemics spread throughout Illinois, Missouri and the Great Plains, and within the cities of Baltimore, Memphis and Washington D.C., especially in areas distributing contaminated drinking water. Cholera affected all people – including President James K. Polk, our eleventh president, who died in 1849, and President Zachary Taylor, our twelfth president, who died in 1850.

Within that era, major cities across the country felt the accumulating effects of growing populations and industrial waste on the quality of their clean water. Seeking to improve their drinking water's taste, odor and clarity, several cities initiated water filtration systems, which in turn reduced waterborne diseases, cholera among them. This observation became an impetus for many cities to install water filtration systems.

Filtration and chlorination processes improve water quality in different ways. Filtration merely removes sediments and microbial organic particles. Chlorination, on the other hand, removes chemical compounds which cause unpleasant tastes and odors, disinfects by killing or inactivating microbes, and prevents microbial growth throughout the distribution process. Because of this, chlorination became the preferred method for disinfection in the U.S. By 1918, over 1,000 municipalities were chlorinating their water.

Continuing the study of European trends for cleaner water in the early 1900s, Jersey City and Chicago began chlorinating their water to further prevent waterborne diseases and improve the taste. As with filtration, many American cities, noticing the benefits, began to chlorinate their water. Keeping abreast of safe water upgrades, the villages of Coxsackie, Athens and Catskill, thriving on their clean water, installed filtration and chlorination systems as additional protective measures for their communities.

The Continuing Need for Clean Water

Throughout the 1880s and 1900s, significant improvements were designed to produce cleaner water through both filtration and chlorination systems in larger volumes for growing populations. Then, as a safeguard, in 1915, the United States Public Health System instituted a set of standards that included bacterial sampling within the distribution water systems as a protective verification for clean water. By the early 1940s – that is, slightly more than 100 years after the cholera epidemics that shook the nation throughout 1832 and 1834 – the clean water sources, filtration and chlorination monitored by health protective policies had virtually eliminated waterborne infectious disease outbreaks in the United States.

People across the nation often take clean water for granted until a break in the disinfecting processes requires additional safety precautions. Many are unaware that cholera epidemics still do exist throughout today's world. In fact, the World Health Organization estimates the annual number of global cholera-related deaths ranges from 100,000 to 120,000 people. Ongoing epidemics include Haiti's report that more than 7,000 Haitians have already died from cholera during its continuing epidemic, which began in October 2010.

Supplying populations with quality safe water is pivotal for the present and future health of Greene County, our nation and the world. Greene County struggled through the unknowns of cholera epidemics from 1832 to 1853. Thereafter, its communities, aware of cholera's potential to return to the area, embraced the words printed in 1832 in the Catskill Recorder, to take "every possible precaution and preventive measure." The county held onto these words throughout the nineteenth and twentieth centuries as it continued to protect the health of its communities against future cholera outbreaks, through the development and maintenance of access to adequate clean drinking water.