



Friends of the Old Croton Aqueduct

Newsletter

No. 21, Summer 2005

Historic Wooden Water Pipes Unearthed

*Gerard Koeppel**

In the late afternoon of last October 21st at Coenties Slip and Water Street in Manhattan, a backhoe operated by a Parks Department contractor struck something hard and unexpected, four feet belowground. It hit what appeared to be a tree trunk, lying on its side. A supervisor phoned urban archeologist Joan Geismar, a consultant on buried things of possible significance. Geismar arrived on the scene early the next morning to find the trunk dug up: a 10-foot log fragment, apparently hollow but filled with dirt. Geismar began exploring. Gradually, she scraped clean the upper edge of another log, this one over 13 feet long; connected to it was another log a few inches longer. To the untrained eye, these logs were perhaps remnants of some derelict building. Geismar recognized them as water pipes, among the city's first. The 13-footers, laid in the ground beneath Coenties Slip 200 years ago, are the most remarkable of their sort ever discovered intact.

In the summer of 1798, New York, a city of 60,000 people expanding rapidly up Manhattan from its southern tip, experienced a devastating yellow fever epidemic in which 2,000 people died. Doctors theorized that the disease was transmitted by miasmas of bad air rising from the town's swampy fringes and filthy streets (the real agent of death was infected mosquitoes breeding in those places). The suggested cure: piping



Wooden water pipes from early 1800s, unearthed last year in lower Manhattan. (Photo by Joan Geismar, with permission.)

abundant fresh water from the pristine Bronx River. This would banish disease and end generations of reliance on the distasteful, insufficient, and increasingly polluted wells for which New York was infamous. With the city's consent, the state legislature in 1799 chartered the Manhattan Company, ostensibly a business to purify New York's water supply. The company founder was Aaron Burr, much less interested in water than banking. Before supplying water, Burr's company opened a bank, the pioneering financial institution recently known as Chase Manhattan, now J.P. Morgan Chase.

As a water provider, the Manhattan Company was a dismal failure. Instead of channeling a mainland river, the company built a meager waterworks - well, pump, and small reservoir - on suburban Chambers Street, and laid a haphazard network of yellow pine pipe down to the town. Sometime before 1808, the company placed the Coenties Slip line: 30 inches around, with a narrow six-inch bore. The 25 customers who tapped it with even smaller service pipe were likely no better served than others whose complaints of dry cocks and empty promises resound in contemporary newspapers, letters, and diaries.

Manhattan Company claims of monopoly water rights (on which its banking privileges depended) suppressed New York's water fortunes through decades of disease and fire until the city built its own Croton Aqueduct, which brought northern Westchester river water beginning in 1842. Croton became the model for public urban water supplies and the origin of New York's now vast modern supply, run today by the city Department of Environmental Protection. The Manhattan Company quietly abandoned its water operations, and eventually got a banking charter.

For most of the past century and a half, New York's buried wooden pipe has rotted away, or been dug up and discarded in the course of construction excavations. Some gets sliced up as souvenirs for contractors, officials, collectors, and bank branches. City museums have bits of pipe, short pieces mostly in



Manhattan Company's "laughably small" Chambers St reservoir, 1825. The god Oceanus, the company symbol, is at top. (New York Public Library print collection)

storage or sidehall displays. Nothing like the Coenties Slip pair - unique in their original length and coupling and excellent condition - has ever been preserved and displayed intact. Inefficient though they might have been in use, these post-colonial pipes of slender pine are the city's oldest surviving infrastructure.

Days after their discovery, the pipes were dug up and, along with the shorter section, taken to a conservator in New Jersey. There they have begun a year-long preservative bath in polyethylene glycol before freeze-drying at another facility. All of this is happening through a collaboration as rare as the pipes themselves. A group of public agency representatives (Department of Environmental Protection, Parks Department, Landmarks Preservation Commission, Municipal Archives), individuals with expertise in the subject, the pipe conservator, cultural institutions, and others has been meeting since November.

We have agreed that the pipes should be preserved and publicly displayed together. The question we are now grappling with is how and where to display them. Together, they weigh 1,600 pounds; aligned to accentuate the point at which they connect, they stretch nearly 30 feet. In the months ahead, as the pipes are prepared for their reentry into modern New York, our surrogate group will continue the effort to find them a good home.

**Gerard Koeppl is author of Water for Gotham (2000, Princeton University Press). Portions of this text appeared under the title "Pipe Dreams" in the New York Times, March 13, 2005.*

High Bridge at the Gotham Center

Nearly 400 people filled City University of New York's Graduate Center auditorium on April 12 for a program on historic and contemporary aspects of New York City's water supply. The program was co-sponsored by the Gotham Center for New York City History, headed by historian Mike Wallace, and the High Bridge Coalition, including Friends of the Old Croton Aqueduct.

Friends' vice president Robert Kornfeld, Jr., summarized the history of the High Bridge. Perhaps the biggest challenge facing the builders of the Croton Aqueduct was how to carry Croton water from the mainland (then Westchester County, now the Bronx) across the Harlem River to Manhattan. David Douglass, Chief Engineer of the Aqueduct prior to the start of construction, was the visionary who, inspired by precedents at Lisbon and Spoleto and the Romans' Pont du Gard, proposed building a 126-foot-high crossing and chose its site.

The bridge was actually built by Douglass' successor, John B. Jervis, who stayed on at half-pay to finish it and see it open in 1848, six years after the Aqueduct. Jervis and the Aqueduct commissioners favored a low-level crossing to save money, but under pressure from nearby landowners, who believed a spectacular high span would enhance property values, the state legislature opted for this solution. The bridge became a hugely popular subject for artists and destination for visitors, sparking a tourism and recreation boom on both sides of the river. Ever thrifty, Jervis built the bridge 100 feet high, the minimum specified by the legislature, and laid the pipes in an inverted siphon 12 feet below the top of the river's bluffs to save on masonry.

The bridge's capacity was later enlarged under Albert Craven and its appearance and proportions improved when, in 1862, a 90-inch-diameter pipe was laid on top of the two original 36-inch mains, the parapet heightened, and a vaulted, brick-paved deck added. In 1872 the High Service Works (reservoir,



Air view of the High Bridge, 1978, viewed from Harlem River (foreground) across Manhattan to the Hudson River. High Bridge Tower and High Bridge Pool (on the site of High Bridge Reservoir) are at right. (Historic American Engineering Record, Library of Congress, photo by Jack Boucher)

powerhouse, and High Bridge Tower, still standing) were built to serve the heights of north Manhattan. Decades later, after newer aqueducts opened, the Navy proposed demolishing the bridge, citing it as an obstacle to navigation. An outcry (*Scientific American* called it "municipal vandalism") led to a compromise - partial demolition - and in 1927-28 the piers of the arches over water were replaced by today's steel arch.

Michael Soliman of the city Department of Transportation (DOT) described the engineering inspection of the bridge and its gatehouses now underway for the Parks Department. The inspection, funded by DOT and the Department of Environmental Protection (DEP), includes use of a floating barge with a 100-foot crane that lifts inspectors to the bridge's heights and a remote camera lowered into the piers, which are hollow. Some loss of mortar was found, but the piers are level, plumb, and dry — a good sign. Soliman likened the deck, which covers the pipe vault, to the "roof of a covered bridge." The inspection report is eagerly awaited by the High Bridge Coalition, which is campaigning to have the bridge reopened as a destination for visitors once again, as well as a greenway link.

Other presentations were also of great interest.

Dale Estus of Local 147 of the Tunnel Workers Union is a third-generation sandhog who works on the Manhattan leg of the Third Water Tunnel. He showed astonishing pictures of the changes in work conditions and apparatus over 30 years. Diane Galusha of the Catskill Watershed Corp. told poignant tales of the impacts of the early 1900s Catskill Aqueduct—families on the land for generations forced to move, 2,000 graves reinterred—and of current progress in protecting the watershed. Author and program moderator Gerard Koeppel described the early history that led to the Croton Aqueduct, and Joel Miele, former DEP commissioner, talked about the city's water supply system, in the past and today.

DEP Commissioner Emily Lloyd introduced the program, noting that 2005 is the 100th anniversary of the legislation that created the New York City Board of Water Supply and enabled the city to expand its system beyond the Croton watershed to west of the Hudson. This year is also, of course, the centennial year (2005-06) of the New Croton Dam.

Aqueduct Treetops Cut

Peter Iskenderian, manager of the Aqueduct trail for State Parks, discovered while on the trail in late April that the crowns of some 30 mature trees along both sides of the Aqueduct south of Untermyer Park in Yonkers had been cut off. The trees include red oak, black cherry, black birch, white oak, and sugar maple. The treetops were hacked so crudely and so extensively that many of the trees are expected to die as a result, according to a state arborist who examined the damage. State Parks police have investigated and handed over the case to the Yonkers District Attorney's office, where it awaits legal action. Substantial punitive fines for the destruction of state property are anticipated.



Mavis Cain looks at sheared treetops on the trail. (Photo by C. Pahn)

Friends' Leaders Honored by Garden Club

Connie Porter of Irvington, longtime Aqueduct advocate, and Mavis Cain of Dobbs Ferry, current Friends of the Aqueduct president, were honored at a June 14 meeting of the Garden Club of Irvington in the Lyndhurst Rose Garden. Pru Montgomery, president of the Irvington club, presented awards from the Garden Club of America to Connie and Mavis for their "outstanding leadership in protecting the Old Croton Aqueduct Trail and garnering support for its preservation."

Mavis, who has walked the trail for years, joined the Friends when the trail was targeted as a gas pipeline site. Now in her second term as president, she is liaison between the public and the park administration, supporting activities that improve the Aqueduct experience. Her work with young people has led to a steady increase in school visits to the Ossining visitor



L. to r.: Connie Porter, Pru Montgomery, and Mavis Cain at the awards ceremony. (Photo by M. Morrisett)

center and into the Aqueduct tunnel. She is heading a campaign to transform the Keeper's House on the trail in Dobbs Ferry into a visitor and education center. The Friends have received \$694,000 in federal funds, and are now raising an additional \$300,000 needed to complete the project.

As a founding member of the Croton Aqueduct Committee, Connie led the successful effort in 1974 to defeat an initiative to pave the trail as an 8-foot-wide bikeway. She later played a forceful role opposing the gas pipeline proposal. She served for eight years as treasurer of the Friends and continues as a board member to be active in preservation issues and fundraising for the Keeper's House campaign.

Mr. Croton River Turns 100

Ed Rondthaler, a living treasure if ever there was one, held forth for 40 minutes to a standing room audience at the Croton Free Library on June 2nd. This was remarkable because the evening, organized by the Friends of History, was a celebration of Ed's 100th birthday. Strong in voice and spilling over with his customary warmth and enthusiasm, Ed stood at the podium and delighted those who had come to celebrate him with story, song, and a phonetic spelling demonstration, and could probably have kept going for another 40 minutes if Carl Oechsner, who emceed the event, hadn't decided it was time for birthday cupcakes.

Ed probably knows as much or more about the Croton River as anyone alive. He and his wife, Dot, came to Croton in 1941 and gradually explored the river over its full length - on foot, by canoe, even putting ear to pavement where the stream is channeled underground. Thanks to Cornelia Cotton, in 1999 he gave the first public lecture sponsored by Friends of the Old Croton Aqueduct. What a talk it was—funny, enlightening about the Croton's islands, rapids, and human and natural history, and full of his passion for this little known but often beautiful and oh-so-important stream. There were stories, as always—to wit, one about the prescient Ringling Bros. elephant who refused to cross a high bridge that once spanned Croton Gorge . . . the day before the bridge collapsed. The following year Ed gave another Friends'-sponsored slide show, this time about the Croton's three tributaries, all of which he had also explored.

Ed lives in a landmark of sorts—a Sears Roebuck house in Croton on the bluffs above the river (where he keeps a canoe he is always ready to lend out). On his living room wall, above the sofa, is a map he has



Friends of the Aqueduct board members at the celebration: l.-r. Carl Grimm, William Cassella, Cornelia Cotton, Karen Schatzel, centenarian Ed Rondthaler, and Charlotte Fahn. (Photo by S. Fahn)

created, in thin wire, of the lower Croton, with depictions, also "drawn" in wire, of the bridges that once crossed the river. There is even a working tide wheel. Visitors are welcome, and it is a rare treat to have Ed guide you along his unique wall sculpture, telling stories as he goes, not only of the bridges but of the colorful characters—celebrities and plain folk—who gave life to it all.

Fittingly, Ed shares a centennial birthday year with the New Croton Dam. Quoting Joanne Oechsner— "Ed is an inspiration, teaching us how to grow old with grace and humor, never losing his zest for life"—the Friends congratulate Ed on reaching 100 and thank him for continuing to enrich us all.



Trail work. *This giant pothole near the north end of the trail, abutting a steep slope at the Croton Gorge Unique Area signpost, opened after heavy rains in March. Contributing to the washout, according to State Parks Aqueduct Manager Peter Iskenderian, was a drain buried under three inches of dirt. The Aqueduct crew used 17 truckloads of fill, collected from dirt and rock debris elsewhere on the trail and thus cost-free, to fill the hole. (Photo by C. Fahn)*

Aqueduct News / In Brief

Croton Dam Road across the top of the New Croton Dam has been reopened to pedestrians by the New York City Department of Environmental Protection. The road atop the dam will remain permanently closed to all except emergency vehicles. The **new bridge over the spillway** is complete and looks beautiful. . . . Westchester County has published a full-color, large-format fold-out map, **"Hike and Bike the Westchester Way,"** showing the route of six trails through the county, including the Old Croton Aqueduct. Information is provided on several tourism destinations along or near each of the six trails, as well as practical information for visitors. For a free copy, call the county Office of Tourism at 800-833-9282, or the county Parks Department, 914-864-PARK. The map can also be requested online at www.westchester-tourism.com. . . . **Terence Mulrooney** of Rockland County has joined **Tony Failla** on the State Parks full-time crew. This is the team that keeps the trail in good condition for all of us to enjoy. Welcomet, Terence! . . . **The work at Sleepy Hollow High School** to open to the public the doors of the breezeway that blocks the trail, thus ending the detour for trail users to the stairway behind the high school, has been rescheduled to next summer (2006). . . . **The Friends' first season of leading guided walks and Ossining weir tours** for the public has been a big success, letting us talk with old friends and make new ones for the Aqueduct. Great thanks to Hal Kaplan, Jean Horkans, Mavis Cain, John and Katalina Flack, Douglas Emilio, Holly Daly, Tom Tarnowsky, and Charlotte Fahn for leading and accompanying, and to Pamela Sullivan for outstanding publicity work.

Community Groups Take Pride in Aqueduct

A May weekend saw the Aqueduct benefit from the work of several community service teams. For the third year in a row, as part of its annual Community Service Day, Temple Beth Shalom of Hastings sent volunteers to help spruce up facilities. On May 22, 25 adults and kids worked on Aqueduct grounds around the Keeper's House. These willing hands painted the shed doors and the posts that line the property, and planted bushes on the east side of the house.

Their effort coincided with the national May 21-22 Take Pride in America weekend, whose general theme was "It's your land, lend a hand." The Friends promoted additional activities in Dobbs Ferry and Sleepy Hollow. In Dobbs Ferry, the Friends and the high school arranged for a giant cleanup of the trail behind the school and in the adjacent woods, with more than 40 people filling about the same number of trashbags. Sleepy Hollow High School teacher Mr. Choi had students out on the trail doing a similar cleanup for several days. A big thank you to all who "lent a hand."



Temple Beth Shalom volunteers at the Aqueduct shed. (Photo by D. Emilio)



The Dobbs Ferry High School trail cleanup crew. (Photo by Saralyn Miller)



Calendar Notes

HUDSON RIVER RAMBLE EVENTS. The following four programs, all free, are part of the Ramble's 150 events over the course of two weekends. For more details, and to see the wealth of offerings, visit www.hudsonvalleyramble.com in late summer.

—**Sat., Sept. 17.** A walk sponsored by the Ossining Rotary Club. Includes a portion of the Aqueduct trail, guided visits into the Aqueduct tunnel and to Jug Tavern and Sparta Cemetery, and more. 9:00 am. Meet at Ossining's Joseph G. Caputo Community Center, 95 Broadway. Directions: turn onto Broadway from Highland Ave. (Rte. 9), opposite Croton Ave. (Rte. 133); also walkable from Ossining train station. 914-523-4230.

—**Sun., Sept. 18.** Bike the Aqueduct with Henry Atterbury. Supt. Of Ossining Parks & Recreation, heading north from Ossining's community center (see Sept. 17 for directions) to the New Croton Dam, enjoying views and Aqueduct features along the way. On the return trip visit the weir chamber to view the Aqueduct interior. 10 am. Bring lunch/water. 8-10 miles. (Bikes must be toted up 2 short stairways and a short but steep hill.) Pre-register at 914-941-3189, ext.302.

—**Sat., Sept. 24.** Weir tour. See a video and exhibit about the Aqueduct's history, and visit the inside of the Aqueduct tunnel. Optional walk on the Aqueduct trail afterwards. Led by Friends of the Old Croton Aqueduct. 1:00 pm. Meet at Ossining's Joseph G. Caputo Community Center. See Sept. 17 for directions. No registration required. 914-478-3961.

—**Sun., Sept. 25.** Traverse a woodland section of the Aqueduct and stroll through the grounds of beautiful Rockwood Hall, former estate of William Rockefeller. Return via a trail in Rockefeller State Park Preserve and learn about the history of the Aqueduct and the Rockefeller family in the Sleepy Hollow area. Led by Friends of the Old Croton

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Please make check payable to Friends of the Old Croton Aqueduct. Send it with this coupon to the Friends at Overseer's House, 15 Walnut St., Dobbs Ferry, NY 10522-2109.

Name _____

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Please let us know if you would like to volunteer.

Aqueduct. 10 am. Meet at green "OCA" signpost opposite Sleepy Hollow High School parking lot on Bedford Rd. (Rte. 448), about 0.2 mi. east of Broadway (Rte. 9) in Sleepy Hollow. 6-7 miles, 4-5 hrs. No registration required. 914-693-4117.

Sat., Oct. 8 and Sun., Oct. 9. The Friends will again lead walking tours of the Aqueduct route in Manhattan and the Bronx as part of **OpenHouse New York**. Free. For details, see www.ohny.org in September.

Sat., Oct. 15. Weir tour. Same program and details as for Sept. 24.

Sat., Oct. 22. Explore the Aqueduct trail from area near Yonkers' Hudson River Museum to Hastings. with possible side trip into Untermyer Park. Register with Westchester Community College (fee). 914-606-6830 (option 1 on voicemail message) or www.sunywcc.edu, click on Continuing Ed., then Explore Westchester.

Sun., Oct. 23. Walk on the Aqueduct from Five Corners in Hastings approximately to Odell Ave., Yonkers, with possible optional side trips to Untermyer and other parks that adjoin the trail. Led by Hal Kaplan for Friends of the Old Croton Aqueduct. Meet at noon at the green "OCA" Aqueduct signpost on Old Broadway at Five Corners, next to the Grace Church driveway. About 4 miles round trip (2-3 hours). Free; no registration required. 914-376-3156.

Sat., Oct. 29. Weir tour. Visit the interior of the Aqueduct tunnel in Ossining, and see a video and exhibit about the Aqueduct, with an optional trail walk afterwards. Register with Westchester Community College (fee). See Oct. 22 for details.

Check www.aqueduct.org for future outings and events.
Reminder: Friday, Nov. 25 - annual TurkeyWalk on the Aqueduct. Join the group at the start—Croton Gorge County Park—or along the way. Walk ends in Hastings. Jocko Lloyd, 914-479-5559.



Aqueduct Maps. For information on purchasing the Friends' full color, foldout map/guides of the Aqueduct in Westchester and New York City, please visit www.aqueduct.org or call 914-693-4117.



For inquiries about Old Croton Aqueduct State Historic Park or to report trail conditions, call Park Manager Peter Iskenderian at 914-693-5259.



Old Croton Aqueduct in Pinecrest Drive area, Hastings, 1928. Photo by Arthur Langmuir. (Courtesy of Hastings Historical Society)

Newsletter: Charlotte Fahn, *Editor*. News items, reminiscences, and comments welcome: 914-478-3961 or czfahn@yahoo.com or by mail c/o the Friends.

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Friends of the Old Croton Aqueduct
Overseer's House
15 Walnut Street
Dobbs Ferry, NY 10522

Friends of the Old Croton Aqueduct is a private, non-profit, volunteer organization formed to protect and preserve the Old Croton Aqueduct. The Friends work to raise public awareness of the Aqueduct and trail, and to secure the resources that will enable this historic greenway to remain unspoiled in perpetuity. Address: Overseer's House, 15 Walnut St. Dobbs Ferry, NY 10522-2109; telephone 914-693-4117, www.aqueduct.org

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