

Friends of the Old Croton Aqueduct

Newsletter

No. 24, Summer 2006

A Door Opens In the Pocantico Weir

Thanks to Peter Iskenderian, Manager of Old Croton Aqueduct State Historic Park, the public will now be able, on occasion, to enter the weir chamber on the trail in Rockefeller State Park Preserve. They will look down to the horseshoe shape of the brick tunnel through which Croton River water once flowed, and see the sheet of iron suspended above the Aqueduct that was lowered to divert the water into the Pocantico River (originally the Mill River), allowing maintenance of this section of the tunnel. It is a reminder that beneath the bucolic footpath we treasure is a landmark engineering work that was once New York City's only supply of pure water, operated and maintained by a devoted crew under sometimes harrowing conditions.

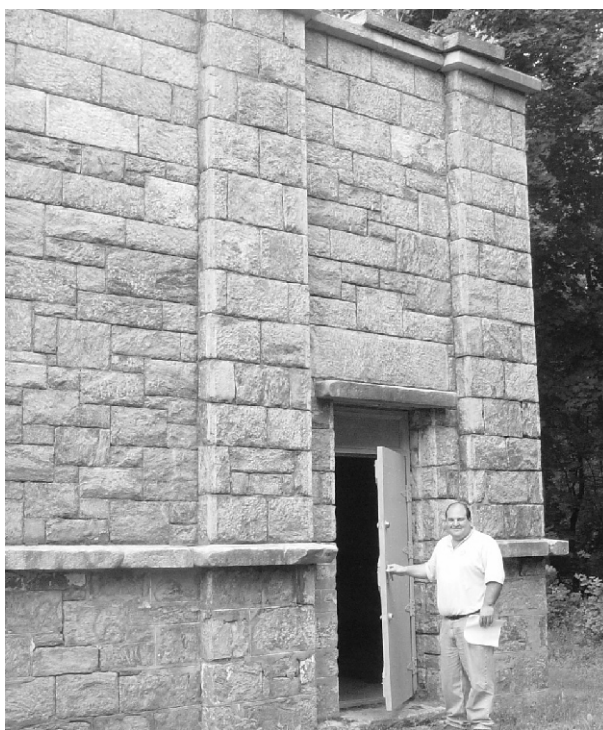
There are four of the windowless, stone weir chambers on the Aqueduct: in the village of Ossining, at Pocantico, next to Untermyer Park in Yonkers, and in Van Cortlandt Park in the Bronx. Until now, the public could enter only the Ossining weir, which was modified decades ago to permit visitors to stand in the water tunnel itself. Although the Pocantico weir

is a little smaller, the two have the same cool, damp air, the same small, square opening in the roof for ventilation, and a similar layout of internal elements. If you've been in the Ossining weir chamber, you will immediately "understand" Pocantico.

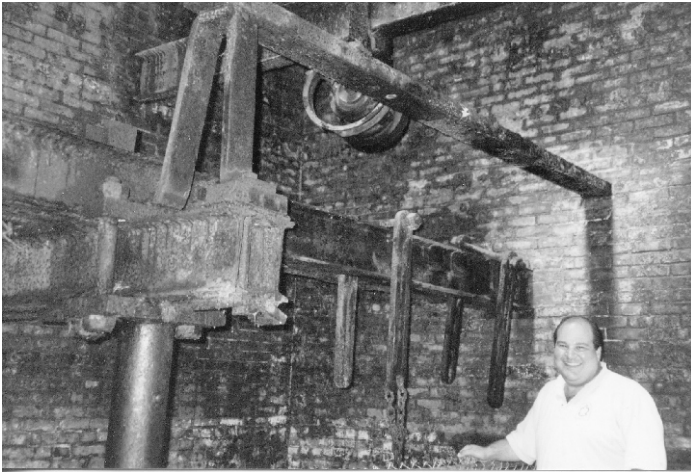
In contrast with the experience at Ossining, here you cannot descend to the water tunnel level or stand in (or even see into) the tunnel. There are no interpretive

signs, no electricity, no walkway. The mechanism to operate the valve that opened and closed the diversion pipe, and the pipe itself, are not visible. What there is is "true grit," the feeling of being in an ungentrified working space, rust and all. Peter has installed a low chain link fence, a necessary safety measure, but the angled view to the dark tunnel opening below is unobstructed, letting you see the actual scale of the tunnel that served so monumental a purpose. Several wood floor joists are still in place. It takes only a few minutes to see, but it leaves an impression.

Peter has had this project in mind for more than a year. An opportunity to carry it out arose this spring when Parker Billings of Boy Scout Troop 18, based in Briarcliff Manor, proposed an



State Park Manager Peter Iskenderian at the newly accessible Pocantico weir chamber. (Photos by C. Fahn)



The mechanism for the metal gate that was lowered to divert Croton water into the Pocantico (Mill) River when the Aqueduct needed maintenance.

Eagle Scout project, providing the needed person-power. A team of eight teenagers, parents, and siblings raked a truckload of debris and broken glass from the weir chamber. It took all hands to remove a thick wood and metal slab, purpose unknown; two other slabs had to be chained and dragged out by truck. Black swallow-wart, an invasive species threatening the surrounding landscape, was completely removed "but will return for sure," says Peter.

The weir can be opened by prior arrangement for groups walking on this section of the Aqueduct trail in Rockefeller State Park Preserve. For now, thank you, Peter and Scouts and families of Troop 18, for opening a new door to the Aqueduct.

Reality Arts on the Aqueduct

On June 21 at the High Bridge Recreation Center in Manhattan, an energetic group of high school-age students and their teachers presented two projects to the High Bridge Coalition Steering Committee: a 10-foot-long model of the High Bridge, and a lively video they had created. Both were donated to the Coalition to use in its campaign to reopen the High Bridge. Lead teacher Michael Champagne's class is part of the Career Education Center/C.A.R.E.S. alternative high school program based at St. Luke's Hospital.

Math, history, and architecture were among the subjects applied to the overall theme, "Rome Wasn't Built in A Day." The Reality Arts class focused on the Croton Aqueduct. After viewing the real High Bridge and water tower, the students built their model, at a scale of 12' to the inch, applying computer techniques for shaping the arches. The model includes the High Bridge Water Tower and shows the topographic conditions at

continued on page 6

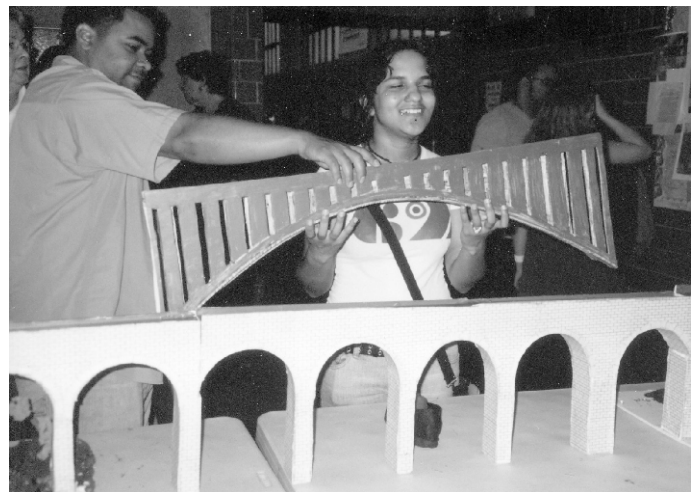


AqueFest

Save the date . . .
Saturday, September 30
Our 2nd Annual Trail-Wide
Celebration

This year's **AqueFest** planning is underway. Join us for live music and merriment along the trail—from Yonkers to Croton. Spread the word. Bring your family and friends!

If you'd like to volunteer for a shift at a celebration station, or if you are a musician or children's entertainer who has an hour or two to perform outdoors, please contact Eileen Charles at ewords@mindspring.com.



The modern section of the C.A.R.E.S. class' High Bridge model being put into place. Top: High Bridge Catalyst Coordinator Joseph Sanchez at left. Bottom: Teacher Michael Champagne at left. (Photos by C. Fahn)

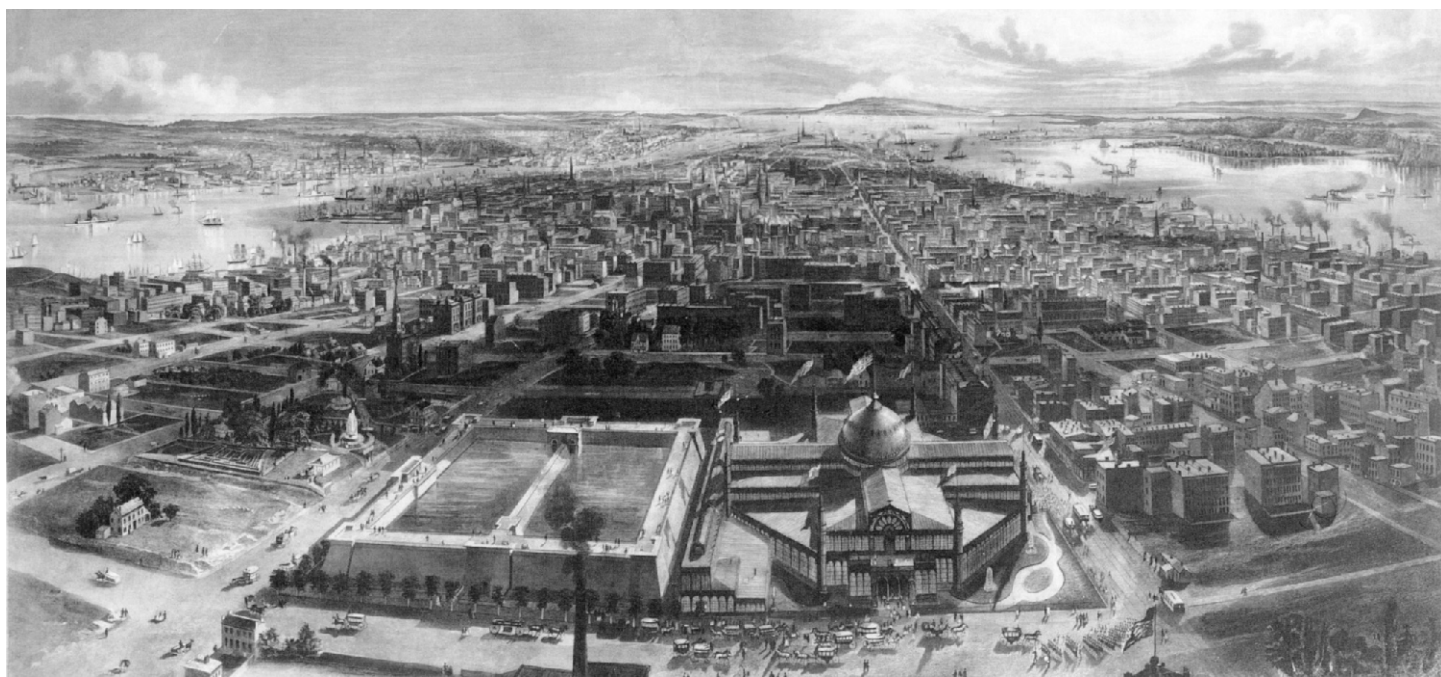
Was the Murray Hill Reservoir in Bryant Park?

The short answer to the title question seems to be no, for most of the reservoir's life, and then yes, for its last year. The Murray Hill Reservoir was the terminal, or distributing, reservoir of the original ("Old") Croton Aqueduct. Egyptianate in style, it was built at Fifth Ave. and 42nd St. on the high ground known as Murray Hill in the countryside north of New York City, which extended from the Battery to about 23rd St. when the Aqueduct opened in 1842. (Manhattan's street grid had been laid out on paper in the renowned "Commissioners' Plan of 1811.")

Today's Bryant Park is bordered by Fifth and Sixth avenues and 40th and 42nd streets. According to a citation in the property records of the New York City Department of Parks & Recreation, this plot was used as a potter's

In two December 1897 resolutions, the city's Board of Estimate and Apportionment authorized removal of the reservoir and erection of the New York Public Library in its place. Parks Department records note "Only building granted for public library; no land assigned." Thus, while the reservoir stood adjacent to Bryant Park, today's great library building stands within it.

For five years the reservoir had an illustrious neighbor in the adjacent park, still named Reservoir Square: the cast-iron and glass Crystal Palace, housing the first world's fair in the United States. Some period engravings of the structure show a massive stone wall off to the side—the western wall of the reservoir. The spectacular "palace" opened on July 14, 1853, and burned on October 5, 1858, said to have been destroyed



Southward view shows Murray Hill Reservoir and Crystal Palace in the foreground, between Fifth and Sixth avenues. ("From the Latting Observatory," Wm. Wellstood, 1855 engraving. Phelps Stokes Collection, New York Public Library)

field from 1823 until 1840, "when the easterly area was taken" for construction of the reservoir. The remainder, named Reservoir Square, officially became a public park in 1847. It was renamed in 1884 in honor of poet and *New York Evening Post* editor William Cullen Bryant.

Fifty-six years later, a resolution passed by the Board of Aldermen on December 22, 1896, declared the "entire area including easterly portion . . . occupied by [the] reservoir as a public park." This seems to be the moment that Bryant Park came to occupy the full site between Fifth and Sixth Avenues, obviously prompted by the coming demolition of the reservoir (c.1898-1900).

entirely in 15 minutes. The fire damaged the reservoir, as reported by Myndert Van Schaick and Alfred Craven in the Croton Aqueduct Department's 1858 Annual Report (quotation provided by Robert Kornfeld, Jr.):

"THE FIRE WHICH DESTROYED THE CRYSTAL PALACE, INJURED THE WESTERN WALL OF THE RESERVOIR VERY CONSIDERABLY. ITS FACE COURSE, BELT COURSE AND COPING HAVING BEEN LARGELY SHELLLED OFF AND CRACKED, MUST BE REMOVED AND NEW WORK SUBSTITUTED. THE WHOLE OF THE WALL MUST BE RE-DRESSED AND ITS JOINTS REPOINTED, AND AS THE COPING AND RAILING OF THE PARAPET WALL HAVE BEEN REMOVED, THEY MUST BE REPLACED."

(continued on page 6)

Croton Dam Planning Traced at Annual Meeting

Robert Kornfeld, Jr., Friends vice-president, was the featured speaker at the Friends' annual meeting, held on April 23 at the Hudson Valley Writers' Center in Sleepy Hollow. After a brief business meeting, Bob began his talk on the New Croton Dam, now 100 years old, with a tribute to David Bates Douglass, the Croton Aqueduct's first chief engineer. Douglass, before laying out the line of the Aqueduct, assessed two routes: one—eventually followed by the first (1842) Croton Aqueduct—paralleling the Hudson, the other following the valley of the Saw Mill River. Elements of both routes were applied in the construction of the full Croton Watershed system, which culminates at the New Croton Dam.

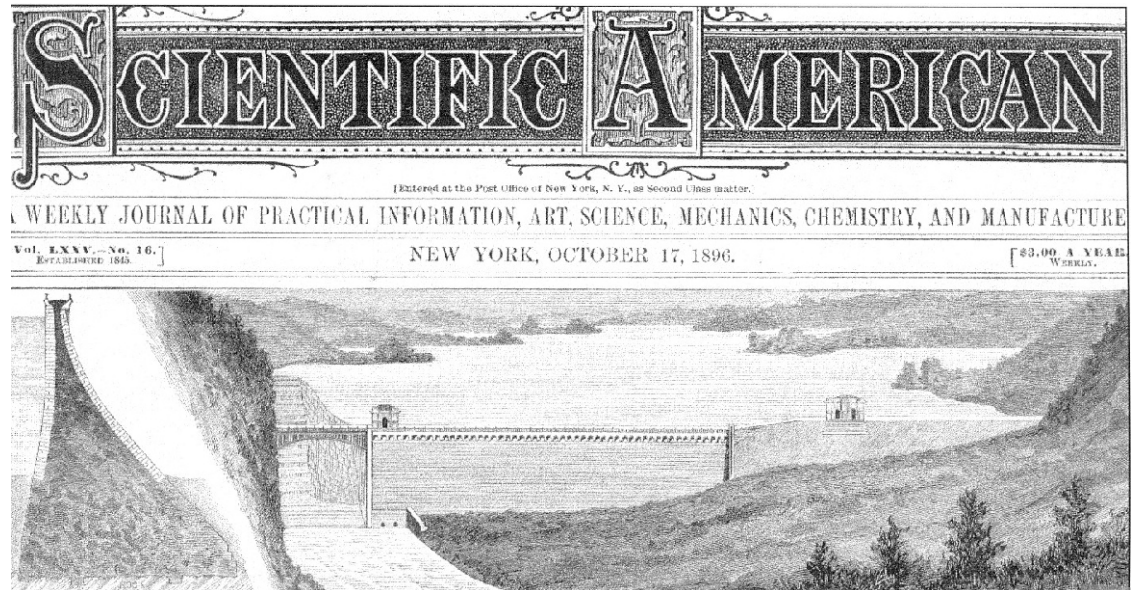
In the 1850s it was becoming clear that the original Croton Aqueduct could not by itself meet the swelling needs of New York City for water, about the same time that new theoretical models were developed in Europe, permitting higher dams than had been possible in the 1830s-40s. A group of civic

and engineering visionaries including Myndert Van Schaick, Benjamin Silliman Church, Croton Aqueduct resident engineer for 20 years after John B. Jervis, and General George Greene, a skilled engineer who designed today's Central Park Reservoir and possibly High Bridge Tower, planned the larger series of dams and reservoirs on the Croton River, completed in 1912. The first built was at Boyd's Corner (1870). Titicus Dam (1890-95) is the older sibling of the New Croton Dam, with similar elements.

Benjamin Church, as brilliant in his way as Douglass and Jervis, was chief engineer of the New (1890) Croton Aqueduct. It was decided that the new aqueduct, a larger version of the "old," would start from the original dam but head straight south along the Saw Mill River valley. The two aqueducts would come together at Tibbetts Brook and head to Jerome Park Reservoir, in the part of Westchester County that later became the Bronx. The

new aqueduct was built before the New Croton Dam and does not go through the dam; only the Old Croton Aqueduct does. The new dam was first planned to be close to the site of today's Quaker Bridge, but was finally moved upstream.

Bob commented that the recently completed new spillway bridge, the third at the site and a modern interpretation of the much-loved original design, was a marvelous way to mark the dam's centennial. The original bridge was to have been faced in stone, but in the



A planning image of the New Croton Dam; the design was later modified. Cross-section at left shows the bulk of the dam belowground. (From Scientific American, 1896, reproduced in "The Croton Dams and Aqueduct," Christopher Tompkins, 2000.)

end the esthetics of the exposed steelwork was (happily) preferred. The spillway, 1,000 feet long, is itself remarkable—dramatic in its interaction with the rock wall that faces it across the Croton Gorge.

A lively question and answer session followed the talk. Friends president Mavis Cain presided over the meeting, organized by Eileen Charles with assistance from Pamela Sullivan, Ruth Gastel, Sara Kelsey, Fred Charles, and many others. Thanks to Christine Lehner for helping arrange our use of the unique venue.

Officer and Board Elections. Mavis Cain was reelected to another term as president, and the other officers and the board of directors were reelected as well. Two new members, Ruth Gastel and Tom Tarnowsky, were welcomed to the board and received everyone's congratulations. The Friends thank Cornelia Cotton and Charlotte Fahn for serving as this year's Nominating Committee.

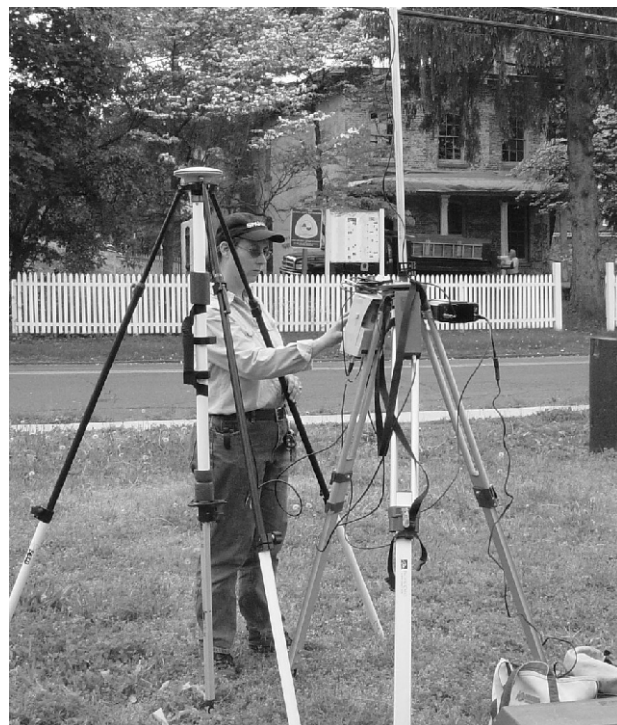
Aqueduct News / In Brief

A survey of the area around the **Keeper's House** and an archeologic assessment of the house and grounds were carried out by New York State Office of Parks, Recreation and Historic Preservation in mid-May, in preparation for the Friends' project, in partnership with the state agency, to transform the house into a visitor and education center*. At the same time, State Parks installed a much needed **new roof on the old Aqueduct barn** at Walnut St. and **reclad its cupola** splendidly in copper . . . Phase 2 of work on the Yonkers portion of the Aqueduct has started, focusing on repairs to the Nepperhan Bridge over the Saw Mill River. The work is funded by a grant from State Senator Nicholas Spano . . . **"Water for the City," an exhibit highlighting the Croton system**, is on view at the Southeast Museum in Brewster (845-279-7500) through December. The exhibit is a collaborative project with New York City's Department of Environmental Protection. The museum's website, www.southeastmuseum.org has an informative on-line exhibit entitled "The Croton Water System." . . . A big thank you to **Groundworks Yonkers' Americorps team** for a trail clean-up in Yonkers, and to Hastings' **Temple Beth Shalom and the Dobbs Ferry Democrats** for debris removal around the trail in Dobbs Ferry . . . Segments of the June 11th Avon Foundation-sponsored **Bear Mountain to New Rochelle charity relay race**, participated in by hundreds of runners, took place on or near the Aqueduct . . . The Albany-based organization Parks & Trails New York featured the Aqueduct in its Spring 2006 newsletter's **"Terrific Trails"** column, describing it as "a bucolic pathway ... atop a brilliant work of nineteenth century civil engineering."

*Our most recent donation for the restoration arrived just as we went to press: a much appreciated \$10,000 grant from the Max and Victoria Dreyfus Foundation.



The gleaming new copper cladding on the cupola of the 1880s Aqueduct barn at Walnut St. in Dobbs Ferry. The barn is used by the State Parks trail maintenance crew. (Photo courtesy of Anne Marie Leone/Rivertowns Enterprise)



Survey in progress of the area around the Keeper's House, in background. (Photo by C. Fahnn)

Autumn Walks and Weir Chamber Visits

led by Friends of the Old Croton Aqueduct and New York State Parks

Free; advance registration not required

Sun., Sept. 17. 10 am. 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. 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. 448) in Sleepy Hollow. 6-7 miles, 4-5 hrs. Leader: Jean Horkans, 914-762-4082. A *Hudson River Valley Ramble* event.

Sun., Oct. 29. Noon. North end of the trail at New Croton Dam to area of Croton Gorge. About 5 miles round trip; mainly level. See beautiful Croton Gorge, stone culverts, ventilators, and Aqueduct embankments built into the ridgeline. Meet at noon in parking lot of Croton Gorge County Park off Rt. 129, about 1/2 mile north of Croton-on-Hudson. Access also from Underhill Ave. exit (westbound) off Taconic State Parkway. Leader: Tom Tarnowsky, 718-549-4704 or tompegt@verizon.net.



On the Ossining-to-Briarcliff Manor walk on April 16, led by Tom Tarnowsky, standing at right. (Photo by C. Fahn)

Ossining Weir Chamber Visits

See a video and exhibit about the history of the Aqueduct, and cross the Aqueduct bridge over Sing Sing Kill to see the inside of the Ossining weir chamber and descend a stairway into the water tunnel itself. Rain or shine. Meet in the Joseph G. Caputo Community Center-Heritage Area Visitor Center, Ossining. Directions: turn west onto Broadway from Highland Ave. (Rte. 9) near intersection of Croton Ave. (Rte. 133). Parking available. Accessible from MetroNorth's Hudson Line Ossining station.

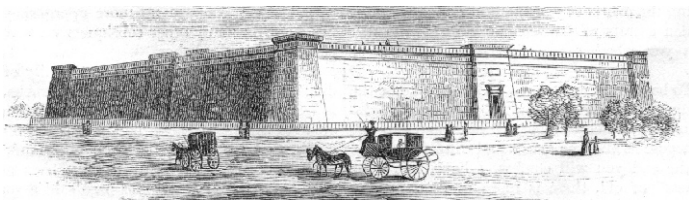
Sat., Sept. 23. 1 pm Led by NYS Office of Parks, Recreation and Historic Preservation. A walk north on the trail may be offered after the weir chamber visit. **914-693-5259.** A *Hudson River Valley Ramble* event.

Sat., Sept. 30. Weir tours as part of Friends of the Old Croton Aqueduct's AqueFest celebration. Call 914-693-4117 the week before for information.

Sat., Oct. 1, 1 pm. Led by Friends of the Old Croton Aqueduct. **914-762-4082.**

Murray Hill Reservoir (cont'd.)

The exposed stone wall visible at the lowest level of the New York Public Library South Court—the auditorium level—is not a remnant of the reservoir as is sometimes thought, according to a 2003 conversation with Ernest Batchelor, an architect at Davis, Brody & Assocs., the firm that carried out the South Court project. There is a visible remnant, but it is not in a part of the library the public can reach. – C. Fahn



"The distributing reservoir in the Fifth Avenue, New York." (From Harper's New Monthly Magazine, December 1860.)

Reality Arts (cont'd.)

the two ends of the bridge. An unusual feature is a separate piece representing the single-arch steel span that in 1928 replaced five of the Roman-style arches, so the bridge can be shown in its original or modified form.

The students gained hands-on video experience by filming hours of footage and then spending more hours editing it down to the 17-minute finished product. The video shows how the model was constructed, the water tower visit, and the adventure of riding Metro-North to Ossining, accompanied by Mr. Champagne and teachers Howard Schwartzberg and Henry Lyons. There a volunteer from Friends of the Old Croton Aqueduct took them into the brick tunnel where the water actually flowed, rounding out their study of the relationship between ancient Roman and modern technology. In the words of Mr. Champagne, "local history became real and relevant."



Calendar Notes

Listed events are free and do not require advance registration unless otherwise noted. For more information on Hudson River Valley Ramble events, see www.hudsonvalleyramble.com in late summer.

AMC: Appalachian Mtn. Club. For autumn walks in Highbridge Park (Manhattan) and High Bridge Water Tower tours, see www.northmanhattanparks.org or call Urban Park Rangers at 212-304-2365. For Town of Cortlandt Aqueduct events, call Recreation & Parks, 914-734-1050.

Sat., Aug. 12. 10am-3pm. Aqueduct walk. Exact route depends on the temperature, but may start in Dobbs Ferry. 5 mi. Rain cancels. Call leader for meeting place and last-minute details. Sponsor: Westch. Trails Assoc. Leader: Ken Abel, 914-761-7974.

Sun., Sept. 17. Aqueduct walk in Rockefeller State Park Preserve. See p. 6.

Sat., Sept. 23. Ossining weir chamber visit. See p. 6.

Sun., Sept. 24. 1pm. Aqueduct walk, North Yonkers (Greystone) to Hastings. Views of the Palisades and Hudson, with visits to Lenoir Preserve and Draper Park along the way. Bring lunch/water. Return to Greystone via Metro-North, \$2. 6 mi. Rain cancels. Leader: Hal Kaplan, 914-376-3156. Sponsor: AMC/Outdoors Club. A Hudson Valley Ramble event; for detailed driving and train directions, see Ramble website (above).

Sat., Sept. 30. AqueFest! See Save the Date, p. 2.

Sat., Oct. 7, and Sun., Oct. 8. The Friends will again lead walking tours of the Aqueduct route in Manhattan and the Bronx as part of [openhousenewyork](http://www.ohny.org). For details, see www.ohny.org in September.

Sun., Oct. 8. Aqueduct walk, Scarborough to Tarrytown. Includes a loop into Rockefeller Park. Brown bag lunch at Eagle Hill with view Kykuit. Drivers park at Tarrytown Rail Sta. and board the northbound 12:10 pm train, exit at Scarborough for hike back to Tarrytown. From Grand Central take 11:20 am train, Hudson Line; exit Scarborough. 9 mi. Steady rain cancels. Sponsor: AMC. Possible coffee stop after hike. Leader: Hal Kaplan, 914-376-3156; call for hike message after Sat., 9 am.

Sat., Oct. 14. Weir chamber visit. See p. 6.

Sun., Oct. 29. Walk north end of Aqueduct trail. See p. 6.

Fri., Nov. 24. Annual TurkeyWalk. Join the group at the start—Croton Gorge County Park—or along the way. Walk ends in Hastings. Check times with Jocko Lloyd, 914-479-5559.

Have you remembered to renew your membership?

For inquiries about Old Croton Aqueduct State Historic Park or to report trail conditions, call Park Manager Peter Iskenderian at 914-693-5259; mailing address: 15 Walnut Street, Dobbs Ferry, NY 10522



Something New. By now you may have met members of our Meet & Greet team sitting outside the State Parks trailer in Dobbs Ferry, talking to trail users. We want to meet as many as possible this summer to keep you up to date about the renovation of the Keepers House across from the trailer and to answer any of your questions. You can also buy an Aqueduct tee shirt for just \$10. We will be "Meeting & Greeting" for a few hours every weekend. Stop by if you see us there! Above: Mavis Cain (left) and Ruth Gastel at table talking with Fatima Mahdi of Hastings. (Photo by C. Fahn)

Map Orders

The Friends' full-color map/guides, *Old Croton Aqueduct State Historic Park* (Westchester County) and *The Old Croton Aqueduct in New York City*, are \$5 each (members, \$4). Add 75 cents shipping and handling for the first map, 50 cents for each additional map. Send check to the Friends at 15 Walnut St., Dobbs Ferry, NY 10522. For the name of a retailer, go to www.aqueduct.org or call 914-693-4117.



MEMBERSHIP COUPON

Your tax-deductible contribution helps to protect and preserve the trail.

- | | |
|---|---|
| <input type="checkbox"/> Renewal | <input type="checkbox"/> New Member |
| <input type="checkbox"/> Friend \$20 | <input type="checkbox"/> Students & retirees \$10 |
| <input type="checkbox"/> Good Friend \$50 | <input type="checkbox"/> Best Friend \$100 |

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

Name _____
Address _____
City/State/Zip _____

Please let us know if you would like to volunteer.



Demolition of the Murray Hill Reservoir, c. 1898-1900. See p. 3. (From: "Great Projects: The Epic Story of the Building of America . . ." by James Tobin, Free Press, 2001. Original source: New-York 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.

© Friends of the Old Croton Aqueduct, Inc., 2006
Production by The Office Ink, Hastings-on-Hudson, NY

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:* Keeper's House, 15 Walnut St. Dobbs Ferry, NY 10522-2109; *telephone* 914-693-4117, www.aqueduct.org

Board of Directors

Mavis Cain *President*

Robert Kornfeld, Jr. *Vice-President*

Edward Brody *Treasurer*

Holly Daly *Secretary-Membership*

Jean Horkans *Secretary-Meetings*

William Cassella

Carl Grimm

Eileen Charles

Joseph Kozlowski

Frederick Charles

William Logan

Cornelia Cotton

Constance Porter

Douglas Emilio

Karen Schatzel

Charlotte Fahn

Pamela Sullivan

John Flack

Thomas Tarnowsky

Ruth Gastel

Ildiko Viczian

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

Nonprofit Org.
US Postage Paid
Permit 3038
White Plains, NY

