

# AMERICAN CANALS

BULLETIN OF  
THE AMERICAN CANAL SOCIETY

BULLETIN NUMBER 94

Editorial Address—968 Chapel Road, Monaca, PA 15061

AUGUST 1995

## PRESIDENT'S MESSAGE

As you read this magazine, think of the work it takes to put it out, year after year. This is our 94th issue, starting with our first in March 1972, 23 years ago, and they've all been informative and stimulating. The credit for this, from the beginning, goes to Bill Shank, who by profession knows both engineering and public relations. Bill turned 80 this year but he is willing to keep up his work on *AMERICAN CANALS* as long as his health lasts and as long as we want him to, doing the final editing and publishing with the material supplied by our editor Denver Walton. So, Happy Birthday and good health to you, Bill!

Don't forget to bring your ideas and topics for discussion to the annual ACS get-together during the International Conference on Historic Canals in Augusta, Georgia (Oct. 2-6) - we're on the program, after dinner on Wednesday

Special visitors to the 10th annual James River Batteau Festival in June were Bob Mulligan and Bryan Gosling from "Schuyler's Batteau," New York's replica of a boat on the Western Inland Lock Navigation, the predecessor of the Erie Canal. The batteau project is one of the best things the New York State Museum ever did. Would anyone like to organize a conference for those interested in batteaux, batteau replicas, and other whitewater work boats around the country?

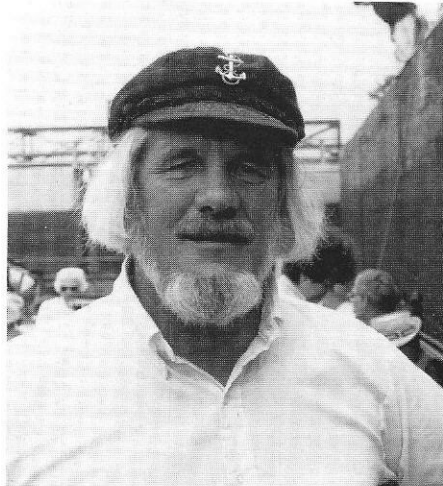
How does your canal compare with the Reynosa Canal? Never heard of it? That's why it's curious that this obscure canal was used as an example in 1826 to prove that the C&O Canal could be built over the Allegheny Mountains: "Even Spain has encountered and overcome much greater difficulties than are presented by the Chesapeake and Ohio Canal, in the construction of the Reynosa Canal, 'which ascends an elevation 3000 feet in the short space of three leagues (1000 in less than a quarter of a league)' more than the utmost elevation of the Alleghanies." You'll find it in Rept. No. 228, 19th Cong., 1st. Sess, House, p. 10, 1826 (courtesy of Mike McMann). Well, the C&O was never built over the Allegheny Mountains, but what happened to the "Reynosa Canal"? Was it the North Branch of the Castille Canal? Has anyone been to see it?

The June 1995 *Engineer Update* (the Corps of Engineers' newsletter, CEPA-C, Washington, DC 20314-1000) notes an interesting new lifesaving device for locks, a "Safety Block." It's a reinforced cube a foot on a side, attached to a rope. If someone falls into the water between a boat and the lock wall, the cube can be dropped into the space. Something to think about if you have a working lock in your canal park.

The Society for Industrial Archaeology (SIA), known for its exciting tours and meetings on

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## "Skipper" Peter Wiles, Sr. Dies at 67



"Skipper" Peter Wiles, Sr., 1928-1995

*After talking with me by phone, Sarah Wiles Ehmann sent me the fine photo of her father shown here, plus two newspaper clippings, one by Robert Andrews of the Post Standard and the other by Amber A. Spain of the Press Observer. With apologies to both writers, I am combining them in the following article. My personal comment is that we have just seen the passing of one of the strongest and most outspoken advocates for the perpetuation of the Erie Canal, one of the great works of mankind (The Publisher).*

Whether at the helm of a charter boat or behind a microphone at the state Legislature, Peter Wiles, Sr. cut a commanding figure.

Few who knew him well called him anything but "The Skipper."

July 6, 1995, The Skipper died in his sleep. He was 67 and lived at Bockes Road, Skaneateles.

Wiles founded the Mid-Lakes Navigation Co. Ltd., in Skaneateles which operates dinner cruises and charter boats, and the Borodino Boatworks, which builds boats.

A Dutch captain's cap atop a white mane that matched his beard gave him the look of a sea captain.

"The Skipper was kind, generous, stubborn, pesky, profane and very, very attractive to little old ladies, kids and drunken canalers," said Nan Murray, who was his assistant for almost 20 years.

Friends chuckle at what they call "Skipperisms," which often were profane and witty. If he liked something, he'd say, "It's the cat's a--."

His impact on the economy of Skaneateles was large, and his impact on the New York state canal system even more so.

Twenty years ago, when the state was talking about abandoning the canal, Wiles began a one-man crusade to save the canal system.

Every spring for about 12 years, Wiles took one of his boats to Rochester and gave free canal tours to children. He created an educational program in which more than 135,000 children in Rochester and Syracuse have participated.

"His influence has been profound," said John Jermano, director of the state canal system. "He was an early visionary of the canal as a recreational canal."

Wiles was a charter member of the New York State Canal Commission.

Jermano and Wiles' concept of allowing people to rent a boat for a weekend and be their own captain was new to New York when he began it in the mid-1980's.

"Now there are others," Jermano said. "But he developed a whole new business for the New York economy."

Wiles got into boats in 1968, when Don Stinson said he was not going to operate the Skaneateles Lake mail boat any longer and persuaded Wiles to take it. He did so and delivered lunches on the cruises.

A year later, Wiles heard of an old boat for sale in Maine, bought it and took out an advertisement asking for "Anybody who wants to take a ride on the canal." He named the boat the "Emita II".

Wiles could be quite a sales rep for the canal. He had a deep voice and slow, compelling cadence.

But he didn't tolerate everyone. Murray recalled a New York City couple who had signed on to the canal overnight trip and expected entertainment.

"The Skipper said, 'Madam, I think you are not having a good time,'" Murray recalled. Wiles pulled ashore and called a taxi.

In 1985, Wiles began making boats patterned after the English "narrow-boats" — and did so with the same enthusiasm he put into running the canal.

Although he never planned on working with boats, that is not to say he was not involved with the water and boats since the time he was a child.

Sarah Ehmann said when her father was a small boy, he sailed on the lake. His family loved Skaneateles.

"Water was in his blood," she said. "He started here on Skaneateles Lake and expanded to include the canals."

In 1985, he built a dinner boat, the Judge Ben Wiles.

"When he built the big boat, it was a good move for the company but he also did it for Skaneateles," Ehmann said. "He was really a part of this com-

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# American Canals

BULLETIN OF THE AMERICAN CANAL SOCIETY

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AMERICAN CANALS is issued quarterly by the American Canal Society, Inc. Objectives of the society are to encourage the preservation, restoration, interpretation, and use of the historic navigational canals of the Americas; to save threatened canals; and to provide an exchange of canal information.

Annual subscription to AMERICAN CANALS is automatic with A.C.S. membership. Send dues payment (\$15 minimum) to Sec'y/Treas. Charles W. Derr, 117 Main St., Freemansburg, PA 18017. Single copies may be purchased at \$3.00 from the publisher.

Manuscripts on subjects consistent with the objectives of the A.C.S. are welcome. They should be sent to the editor.

## PRESIDENT'S MESSAGE

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anything to do with industrial history — including canals — has announced an in-depth 8-day behind-the-scenes tour of the Panama Canal in January 1996, before it's given away. It's for SIA members only, but you can join now: call 1-800-556-7896.

Lastly, have you set your final goals for Dec. 23, 2012? That's date for the end of the world, according to the Mayan calendar. If the TV special was correct. Just to be safe, I'd say we should get all our historic canals nice and tidy by then. We wouldn't want to be caught dead with dirty canals, would we?

Bill Trout

## WABASH ERIE CANAL NOTEBOOK

We are indeed pleased to announce a new book: *The Wabash & Erie Canal Notebook: Allen & Huntington Counties*. This work was completed by Tom Castaldi, a member of CSI. We know you will enjoy learning more about the details of the canal in northeastern Indiana.

Additional copies for gifts etc. may be ordered for \$8.00 (postage & handling included). Order from: Canal Society of Indiana, PO Box 40087, Fort Wayne, IN 46804.

We appreciate Tom's effort to bring this material to CSI. He plans for future additions covering Miami, Cass & Carroll Counties. We look forward to his next publication.

Robert F. Schmidt  
President, Canal Society of Indiana

## "SKIPPER" PETER WILES, SR.

(Concluded from Page One)

community and the building of the boat was good for everyone in Skaneateles. He had a lot of respect for the people of Skaneateles and for the other businesses here."

To prove the effect of his business, he once paid his workers and gave change to customers in Susan B. Anthony dollars. They started to show up all around the area.

One of his employees to receive the dollars was Nan Murray. Until Mr. Wiles' death, the two of them shared an office in Skaneateles. She worked with him on all aspects of the canal business he operated. Ms. Murray said he was very concerned with the preservation of the canal.

"He wrote many letters to the canal commission, legislators, really to anyone who would listen on how to help that canal," she said. "His letters always offered a fresh view of the situation - always with the thoughts in his mind of the people who lived along the canal.

Ms. Murray said one of his interests was helping youngsters both by providing educational programs about the canal in the Rochester area and by hiring a number of people to join the crew of his canal boat, the *Emita II*.

"He brought up an awful lot of young people who crewed his boat. The *Emita II* crew are rather like a school class - but the line goes through many years. The faces may have changed a bit over the years but they were all "Skipper" crew," she said.

Ms. Murray said the Skipper's relationship with his crew was unique.

"His crew had an affection and respect for him - but it was almost a respect of equals," she explained. "He allowed that. He did not simply command. He invited his crew to be his friends and he trusted them and they trusted him. He was just an extraordinary person.

The business expanded from mail boat and dinner cruises so that the company now provides cruises along Onondaga Lake and the state canals, including the Erie, Champlain and Oswego. He cruised the canals with people from all 50 states and a dozen foreign countries. The company also builds boats and rents them to vacationers in Western New York and Florida.

About 20 years ago when there was talk of closing the canal system, Ms. Murray said the Skipper was at any hearing there was regarding the future of the canal system.

"He made such an impassioned plea of the preservation of the canals whenever he could," she said.

Ms. Murray said people along the canal all knew and looked for Mr. Wiles each year. He was welcomed with numbers of people waving and signs saying welcome back.

"He fostered this grand love of that waterway," she said. "He knew the people and he knew the canal - that was where he lived in the summer."

Mr. Wiles created an education program about the canal for schoolchildren in Syracuse and Rochester. More than 135,000 children have participated.

In 1991, Mr. Wiles was named Skaneateles citizen of the year by the Skaneateles Area Chamber of Commerce.

With all of his accomplishments the man leaves behind, one of the most important is the values and lessons he left his family.

"I am really, really, really proud of my dad and I'm going to miss him a lot," Ehmann said.

He was founder of the New York State Tour Boat Association. He was a member of the Onondaga County Antique Dealers Association, the state Canal Planning and Development Board, the state Centennial Canal Committee and the Steamship

Historical Society. He was also director of the Finger Lakes Association and president of the state Council on Waterways.

Surviving are his wife, Harriet; three daughters, Sarah Wiles Ehmann, Hattie Beck Andersen and Libby Wiles, all of Skaneateles; two sons, Peter, Jr. and Daniel, both of Skaneateles; a brother, Ben of Cedarvale; a sister, Edith Ann Bradford of Illinois; five grandchildren; and several nieces and nephews.

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### Other publications: *The Best from American Canals*,

William H. Shank, editor and publisher.

*American Canal Guides*,

William E. Trout III, editor and publisher.

# HISTORIC PHOTO



The "PHOBOS", pinned against a bank of the upper Thames, by a 70-mile/hour windstorm, prepares to renew its voyage. Right to left: Bill Clague, Tom Hahn, Nat Hahn and Ruth Shank. The Thames here is just a small stream. (Photo by Bill Shank)

Twenty years ago, several pioneers of the American Canal Society decided to "have a go" at the English Canals to see if we could whip up similar enthusiasm for the remnants of the American Canals still available in this country. The ninety-foot long Narrowboat which you see here was rented from Tom Sewell, a member of the British diplomatic service, by the Hahns, Shanks and Bill Clague (our ACS legal counsel) who then spent several weeks and several hundred miles on the canals of south England and the Midlands. We started at "Little Venice" in London and traveled East along the Regent's Canal, past the London Zoo, to Camden Town, and then dropped down through 12 locks to the Thames, east of London.

At Camden Lock where most boatmen turn back, we encountered a lock full of trash, including wire and rope which promptly wound itself around our propeller shaft, immobilizing the boat. We floated on down to the next level. Here we let half the water out of the canal to beach the boat and clean the propeller, to the consternation of the local level-walker who came rushing upstream to see what was going on! Once the propeller was free, we continued on to the Thames, past Big Ben and the Parliament Houses, past Hampden Court, past Windsor Castle, past Reading and Oxford, and about five days and two hundred miles later arrived at Lechlaid, at the head of the Thames Navigation, where there was a large enough basin to turn our monster boat around. (The Thames had

dwindled to a very narrow, meandering stream, just a few feet wide.)

At Lechlaid, yours truly fell off the boat at a lock and broke a rib, which bothered me until I got to a hospital later in Liverpool. We returned to Oxford after being pinned against one bank of the Thames for hours by a 70-mile-an-hour windstorm. On the Oxford Canal we turned north toward Stratford on Avon, finding out why our Narrowboat had been built only six and a half feet wide.

On the Oxford, we ran aground on a sand bar for several hours, but by rocking the boat and

throwing towlines ashore we were able to break free and continue our voyage.

In the meantime, Bill Clague, who had left us at Oxford, was attacked by thugs, who relieved him of all his money, British and American. Luckily, he survived and made his way back home, none the worse for his experience. Ruth and I left the Phobos and the Hahns at Banbury (of "Banbury Cross" fame) as I felt the need for attention to my broken rib, and we also wanted to ride the beautiful English trains, which had been passing our four-mile-an-hour canal boat at ninety miles an hour! (You can set your watch by them!)

## CANAL CALENDAR

### September 19, 1995

"History of the C&O Canal" class at Montgomery College in MD. Four lectures and two field trips. Contact (301) 279-5188.

### September 29 - October 1, 1995

Fall weekend in Ottawa, Canada in the Rideau Canal.

### October 2-6, 1995

1995 International Historic Canals Conference, Augusta, GA. Contact (706) 733-2635.

### October 6-8, 1995

Erie Canal Museum display of ship models in Syracuse, NY.

### October 7-8, 1995

Metamora Canal Days, Metamora, IN.

### October 8, 1995

Locks and Leaves Ride: 2½ hour cruise on the Lehigh Canal at Easton, PA. By reservation. Contact (610) 250-6700.

### October 20-22, 1995

Miami & Erie Canal Fall Tour. Defiance Slackwater to Providence Slackwater.

### October 21, 1995

Annual Heritage Hike on the C&O Canal. Noland's Ferry to Brunswick, MD.

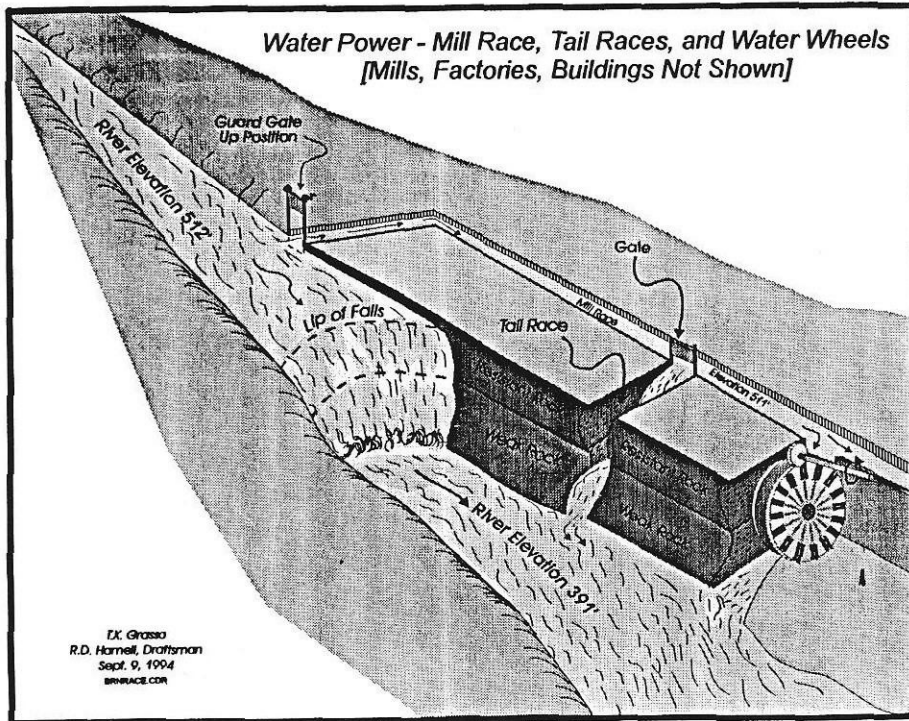
### October 27-29, 1995

Canal Society of Indiana Fall Tour. Attica, IN.

### October 28, 1995

Muddiggers Day. Volunteer work day on the Lehigh Canal in Hugh Moore Park, Easton, PA.

# CANAL SOCIETY OF NEW YORK STATE EXPLORES PORTIONS OF GENESEE AND ERIE CANALS



Drawing showing how the difference in elevation of the Genesee River and the gorge below was utilized to drive a water wheel (or wheels) along the mill race for power.

By Bruce J. Russell - Contributing Editor

Since its inception in 1956 the CANAL SOCIETY OF NEW YORK STATE has been running field trips over portions of the state's canal system, both existing and abandoned. These excursions have enabled its members to see first hand both the workings of the present day NEW YORK STATE BARGE CANALS as well as the remains of the much older "towpath canals" which once covered most regions of the state. Each trip is carefully planned and scouted in advance by the trip committee which attempts to include as much as practical within the space of two days.

On the weekend of May 19, 20, and 21 the field trip covered the northern section of the GENESEE CANAL in the vicinity of Rochester and then the portion of the ERIE CANAL from Rochester to Medina in the direction of Buffalo. Over 80 people signed up for the affair resulting in the use of two chartered motor coaches. Each attendee was also given a field trip guide which had 180 pages filled with historical information about the places which would be visited. This book alone is worth the cost of the two day sojourn. The trip leader was THOMAS X. GRASSO, president of the CS of NYS and a professor at MONROE COUNTY COMMUNITY COLLEGE in Rochester. Dr. GRASSO's specialty is geology and he likewise runs a course on canals. Assisting him during the weekend were David Beebe, Craig "Bullhorn" Williams, David Kipp, and Keith Kroon. Anita Cottrell, the organization's secretary-treasurer, handled the reservations and took care of numerous "behind the scenes" details.

## Part 1 May 19 "Early Bird Special"

On Friday May 19 there was a day of activity designed for those who could arrange their arrival in the Rochester area one day early. While the major sites were included on the Saturday and

Sunday program the Friday itinerary involved visiting three places which figured prominently in New York State's rich and varied canal history.

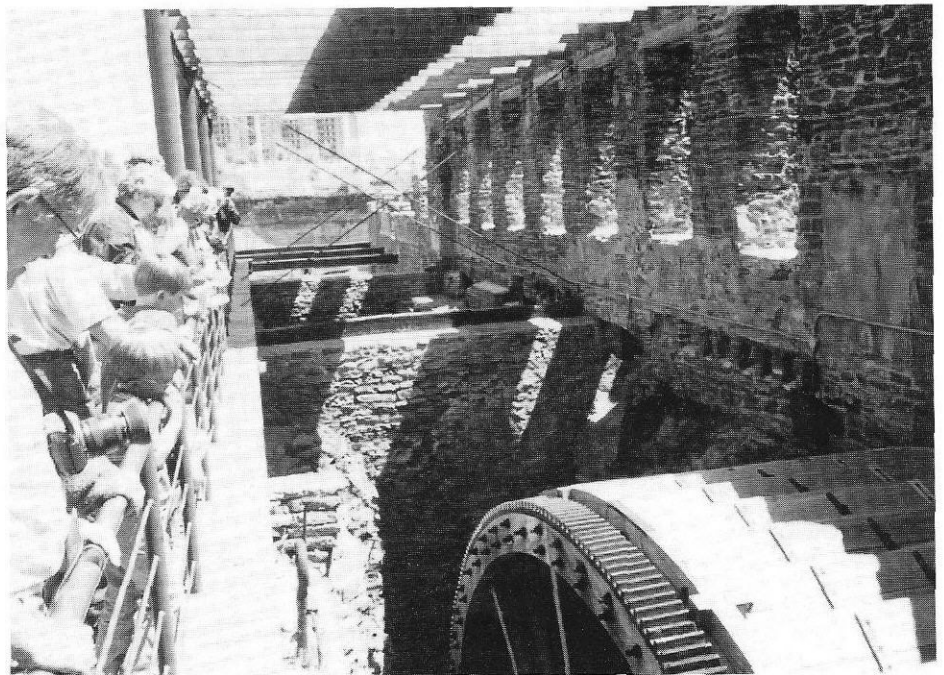
The first stop was at the Rochester Gorge. Here the Genesee River flows over a high cliff before continuing further north to Lake Ontario. Water was utilized to provide power to operate industries in the era.

In Rochester the principal "power canal" was so-called BROWN'S RACE. This was the first stop on the early bird special. Tour leader THOMAS GRASSO explained the workings of the water system, used to operate numerous industries alongside the gorge. Although the race still exists all of the factories which fed off its fast flowing current are presently abandoned and in ruins. The site is presently included in the so-called HIGH FALLS HISTORIC DISTRICT where some restoration is now occurring. At the location of what used to be the KIDD IRON WORKS, MACHINE SHOP AND FOUNDRY a restored water wheel is located.

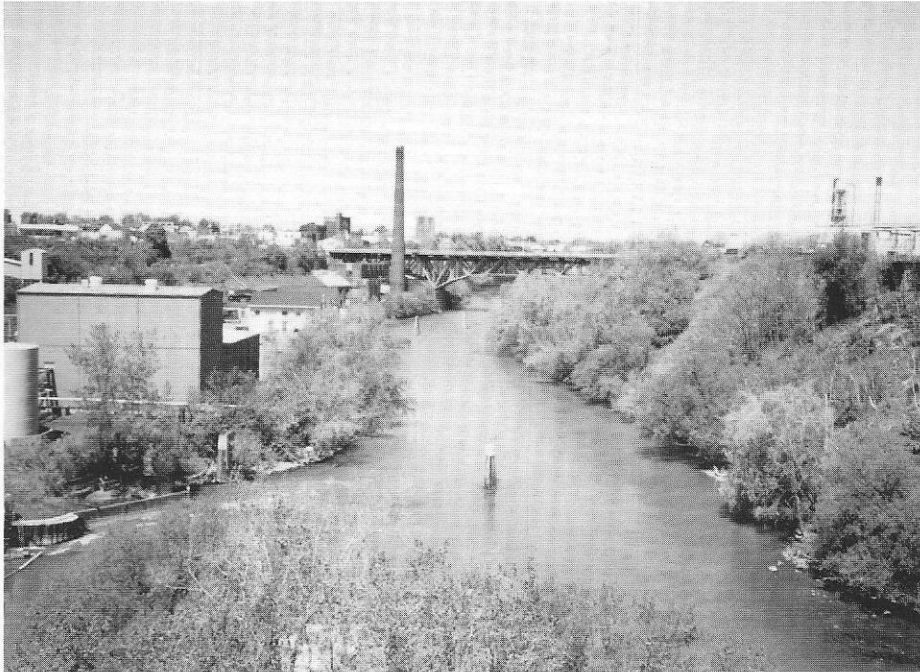
Canals were later used for hydro-electric generation of power. Grasso pointed out the location of a currently functioning hydro-electric plant situated within the Genesee River Gorge owned by Rochester Gas & Electric Company.

Our second stop was at the site of Lock #2 of the GENESEE CANAL. We arrived after traveling south for approximately 10 miles on local highways running parallel to the Genesee River. The GENESEE CANAL was one of several lateral or feeder waterways of the important ERIE. When the ERIE CANAL was completed in 1825 enormous increases in prosperity occurred from Albany to Buffalo. By 1830 people living in the valleys south of the Erie Canal were also clamoring for cheap water transportation. The New York State Legislature therefore authorized the digging of branch canals which would feed the original waterway at various points. One of the lateral canals sanctioned by the state government was the GENESEE which would diverge from the ERIE in Rochester and work its way down the valley of the same name as far south as the New York-Pennsylvania border in Olean, N.Y.

The route of the GENESEE CANAL was surveyed in 1834 and in 1837 the first contracts were authorized. By 1838 the initial 2 miles were open including the junction with the ERIE in Rochester. By 1840 the segment from Rochester to Mt. Morris was finished. This was primarily a



Members of the Canal Society of New York examining a restored water wheel on the "power race." (Russell photo)



**A view of the Genesee River after it has cascaded over the high falls of Rochester, N.Y. It now runs north to Lake Ontario. (Russell photo)**



**A view of the Genesee River cascading over the falls in Rochester, N.Y. and flowing into the Gorge. Some of this water was diverted into BROWN'S RACE. (Russell photo)**

level portion requiring few locks. South of Mt. Morris the canal began to climb and by 1841 Dansville was reached. Many locks were required on this segment, all of which were 15 feet wide, the same as those of the original ERIE CANAL. The waterway itself featured a depth of only 4 feet and a width of 42 feet at the bottom and 46 at the top. Because of financial problems work was temporarily halted at Dansville. For a number of years passenger packet boats ran in addition to freight.

Six years later in 1847 construction resumed until the summit level was reached at Cuba, N.Y. At this point 90 locks had been built making this waterway one of the most heavily locked in the state. In order to provide water to the summit level an artificial lake was created by constructing a 2000 foot earthen dam which still survives. Cuba Lake itself remains in use for recreational purposes. The ultimate goal was getting to the Allegheny River which would provide access to many points in Pennsylvania and permit coal to be shipped from there north into the cities along the Erie Canal corridor. Thus in 1861 Olean was reached and later that same year a connection with the Allegheny River was made at Mill Grove.

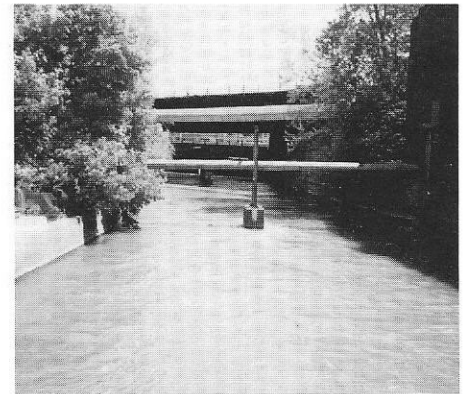
Unfortunately by then Pennsylvania had decided not to finish work on this river to make it suitable for navigation. Hence the anticipated coal traffic never materialized on the GENESEE CANAL. It was obvious at this point that the 80 ft. by 14 ft. boats which drew 3 feet of water were no match for long trains of loaded coal cars. As a result the completed waterway was a money losing proposition from its opening in 1861. Totalling 112 locks a journey over it required several days while train time was measured in hours.

Of the 112 locks 28 consisted of dressed stone, 73 of rough stone, and the remainder were wood. The first group were obviously the most impressive looking while the 11 wooden ones were definitely

built "on the cheap" to save money. In addition as an economy measure several streams were crossed on the level rather than via stone aqueducts. This necessitated guard locks at both points. In addition to lack of business the GENESEE CANAL suffered from inadequate water during the long hot summer months, in spite of the aforementioned reservoirs. Hence in 1878 the New York State legislature decided that the waterway, along with several other "laterals" such as the CHENANGO, had outlived their usefulness and should be abandoned. After the 1878 season the canal was drained, the lock tenders pensioned off, and all accounts settled. In 1880 the right of way was sold to a railroad company which in recent years has also abandoned its line through the Genesee River Valley. Gradually the stones of the lock chambers were removed and Lock #2 which our tour visited is the only remaining stone one.

The final stop of the "early bird special" was at the GREAT EMBANKMENT of the NEW YORK STATE BARGE CANAL. This mile long section of

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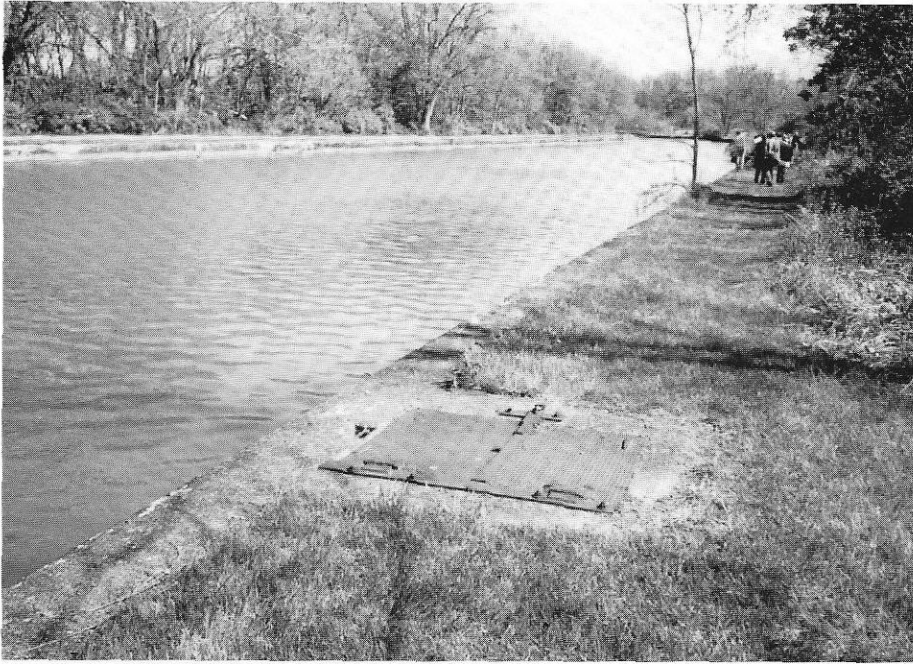


**The main power canal was called Brown's Race. It was used by numerous industries during the 19th Century for power. (Russell photo)**



**The ruins of one of the many factories lining the sides of the Genesee River Gorge in Rochester. All depended on the hydraulic water "head" for power. This particular ruin is all that remains of a trip hammer forge. (Russell photo)**

# GENESEE & ERIE CANAL EXPLORATION



The concrete walls of the mile-long trough of the GREAT EMBANKMENT can be inspected from the inside by entering these access stairs which are indicated by metal coverings. Employees of the BARGE CANAL regularly walk the subterranean passageways looking for cracks in the walls of the concrete trough. (Russell photo)



Those on the Canal Society of New York's "early bird special" on Friday May 19 had an opportunity to visit the GREAT EMBANKMENT of the 1910 era NY STATE BARGE CANAL. This historic marker indicates its purpose. (Russell photo)

(Continued from Page Five)

concrete trough set atop a 70 foot high earthen fill permits the waterway to cut a straight path across the IRONDEQUOIT VALLEY and CREEK. The first Erie Canal or "Clinton's Ditch" negotiated this valley by making several loops and turns. When in the 1840s the second canal or ENLARGED ERIE was surveyed a more direct route was taken. Nevertheless it wasn't the shortest possible means of getting across the depression. In the early years of the present century the surveyors of the third Erie or BARGE CANAL decided that they had no alternative but to construct an embankment to carry it over the VALLEY OF THE IRONDEQUOIT, in the process reducing both distance and travel time. Dirt or fill was removed from several places and with the use of giant steam shovels it was deposited in such a manner that a 70 foot high causeway over a mile

scanned for signs of leakage or other damage which could cause a break. These walkways are accessed by special stairs and man-holes leading from the surface level.

The designers of the NEW YORK STATE BARGE CANAL realized that the 70 foot high GREAT EMBANKMENT was a weak point and potential trouble spot. At each end they installed massive guard gates which in the event of a break can be lowered, thus isolating the mile long portion of the waterway and minimizing loss of water. The concrete structure is now 80 plus years old and while sound it does pose a potential trouble spot. Hence regular visual inspection occurs and the aforementioned drop gates are maintained in working order at all times.

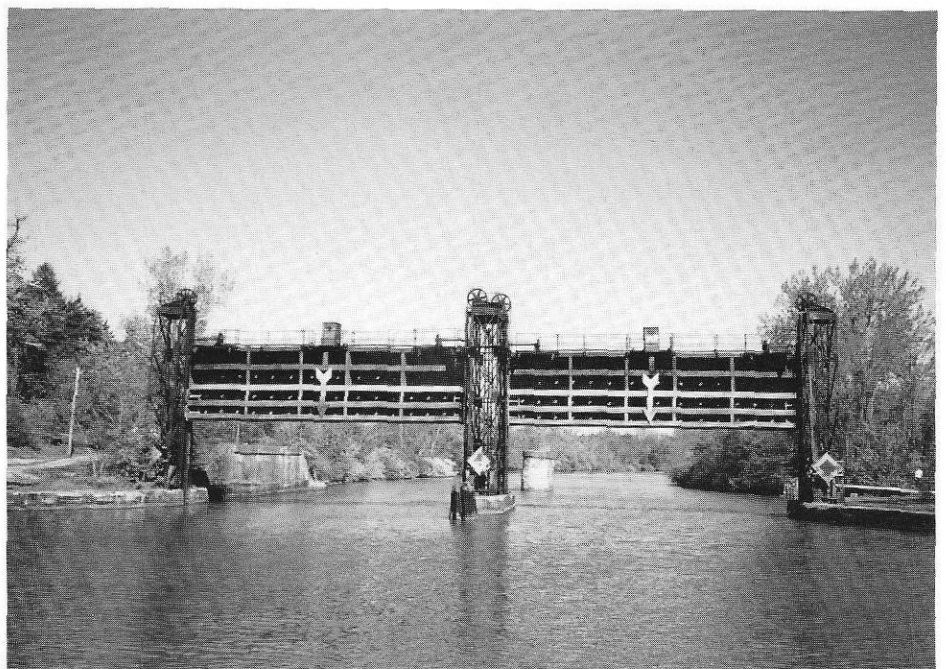
In the early 1820s when the first ERIE CANAL was being dug the work gangs reached a place known as Bushnell's Basin in 1821. This is the present eastern end of the GREAT EMBANKMENT, as well as the periphery of the Irondequoit Valley. For about a year this was as far as traffic on the first waterway could proceed.

RICHARDSON'S CANAL HOUSE INN which was erected in 1818, seven years before completion of "Clinton's Ditch", was used throughout the 19th Century as a canalside facility.

On Friday evening there was a slide presentation by DR. GRASSO featuring views of the GREAT EMBANKMENT under construction between 1910 and 1913. The 1912 break in its walls was illustrated as well as the massive repair job and clean up. There were also scenes of the so-called Junction Lock which connected the newly completed BARGE CANAL with a six mile portion of the old Erie Canal which ran into the downtown section of Rochester, giving access to warehouses and port facilities. Since the new waterway was three feet higher than the older one this temporary lock was required. It was abandoned along with the remnant of the old canal within 2 years once new docks were finished on the Barge Canal. Other topics covered were the Rochester

long was created. By 1905-1910 earth moving machinery was available to accomplish such a task.

Once the GREAT EMBANKMENT was finished the builders excavated a trench along its top which would contain approximately 12 feet of water. This mile long cutting was lined with concrete in three layers with crushed stones in the middle, forming a watertight seal. Furthermore along the sides of the trough an underground inspection walkway was installed which permits the walls to be



At both ends of the mile long GREAT EMBANKMENT stop gates are situated. In the event of a break in the walls this section can be effectively isolated from the rest of the waterway. (Russell photo)

## CANAL ARCHAEOLOGY AT DELPHI, INDIANA

By Wayne Bischoff, Michigan State University

The Wabash and Erie Canal Association of Carroll County and the Delphi City Park Board have recently funded a summer of archaeological work designed to explore the Wabash and Erie Canal. They have chosen Michigan State University to conduct this project, with myself leading a two person crew (not counting volunteers and school children) in an archaeological exploration of buried canal sites in and around Delphi, Indiana.

This project started on June 13th, 1995 and has already produced positive results. A very early historic site, dating to around 1835-1840, was discovered near where the Wabash and Erie Canal once crossed Deer Creek. This site could possibly be a camping site for canal workers during the construction of the canal. A number of ceramic pieces dating to the mid 1830s were found, as well as burnt bone and hand-forged nails. Unfortunately, two feet of river silt from many years of Wabash River flooding prevented extensive below-surface testing.

Another interesting site is a potential lock keeper's house for Delphi's Lock #33. A large number of artifacts have been recovered to the west of the lock, including ceramic sherds, pipe bowls and stems, oyster shells, buttons, and a possible bale seal. Limestone blocks, brick mortar, and square nails points to a building once occupying the site. The entire collection of artifacts dates from the late 1830s to around 1860, which would cover the most active period of canal use. We are hoping to display artifacts from this site as part of Delphi's Fourth of July activities.

### NEW CHILDREN'S BOOK ON THE ERIE CANAL IS A WINNER

By Dr. Lionel D. Wyld, Cumberland, RI

*THE AMAZING IMPOSSIBLE ERIE CANAL.*

By Cheryl Harness. Macmillan, 1995. 27pp + bibliography. \$16.00 U.S. and \$21.50 in Canada.

This book on "America's first superhighway" in the Macmillan Books for Young Readers series is a thoroughly delightful addition to one's library of books on the Erie Canal. Watercolorist Cheryl Harness has done a beautiful job. Surrounded by bright and often elaborate illustrations, the text recounts the basic history of the building of Clinton's Ditch and its effect on the developing new United States of America. It tells us of the groundbreaking ceremony on July 4, 1817, in Rome, New York, and later, when the canal was officially opened in 1825, follows the ten-day parade of boats led by Governor Clinton on the Seneca Chief along the new canal from Buffalo to Albany and then down the Hudson River to the ceremonies in New York Harbor.

The beautiful illustrations, with hand-drawn annotations by the artist, provide a lot of information about how the canal was built, how locks work, and what the canal route was. There are maps showing various portions of the 363-mile original Erie, and even a map of the flotilla passage from Rexford, Waterford, and Albany to New York City.



A local road passes under the GREAT EMBANKMENT.

Aqueduct which became a bridge for trolley car and vehicular traffic once the water was drained from it.

Each registrant was given his package containing tour guide plus other materials, maps, etc. At the conclusion of the slide show most retired to their rooms at the DEPOT INN of Pittsford which

was the headquarters of the weekend gathering. Situated directly on the BARGE CANAL its an elegant facility featuring a late 19th Century railroad motif.

*END OF PART I....Part II will cover the activities of the following day which included eight very interesting stops.)*



Ruins of Lock #2 on the Genesee Canal near Rochester. (Russell photo)

## Mexico Lays Plans For Canal Project

The following item appeared in the WATERWAYS JOURNAL, April 17, 1995:

By Roy Durrenberger

The Mexican government has laid plans to use both private and government funds to construct an inter-oceanic canal, port and rail network on the Isthmus of Tehuantepec, the narrowest point in Mexico. Plans call for the canal to open before December 31, 1999 the day ownership of the Panama Canal is scheduled to be transferred from the United States to Panama. The canal will allow vessels to travel between the Bay of Campeche on the Gulf of Mexico/Atlantic side and the Gulf of Tehuantepec on the Pacific side.

Mexican government officials claim tolls and freight costs to use the proposed Mexican canal will be lower than rates charged to use the Panama Canal. The master plan for building the canal calls for selling concessions that will allow private companies to build and operate freight terminals at ports on both side of the canal.

Under the proposal, sections of the ports will be modernized and operated by private companies, while the government will continue to own the ports. Sections of Mexico's railroad will be auctioned off to companies that will be responsible for operating and maintaining those sections. The Mexican Congress passed a constitutional amendment earlier this year which opened the country's rail system to private sector participation.

# JAMES BRINDLEY AND THE EARLY CANALS



James Brindley (Nat'l Portrait Gallery, London)

*Dr. Roger Squires, our British Board Member, sends this article from the Newcomen Society Bulletin for April, 1995, to finalize the long debate about James Brindley as the father of English Canals.*

*By Dr. Cyril T.G. Boucher, Westwood Farm, Main Road, Westwood, Nottingham, NG16 5HU.*

In a recent article in a quality newspaper, reference was made to the discovery, at Eccles in Lancashire, of a coffin with an engraved plate bearing the coat-of-arms of John Gilbert, but nothing related to canals. Gilbert was the well known agent to the Duke of Bridgewater at Worsley. The article then went on to describe him as the real Engineer of the Bridgewater Canal, and of Brindley as an inspector under his instructions. This has become a popular theme with other writers who also extend it to cover all the canals that Brindley was connected with. But this "pop" theme goes against the weight of evidence. I offer the following summary of this evidence, and I hope that I will have the opportunity to state my

case before the Newcomen Society in circumstances which offer a platform to those holding opposite views.

*Brief summary of evidence that Brindley was the leading Engineer concerned with the beginning, planning and execution of the British canal system.*

*References.* 1 Taken from his diaries and notebooks. 2 His plans. 3 The minute books and records of canal companies or owners. 4 Evidence of his works. 5 The writings of contemporary authors. 6 Samuel Smiles. 7 James Brindley, Engineer, 1716-1772 by Dr. C. Boucher. 8 List of Engineers employed by James Brindley.

*Summary.* On 5.2.1758 Brindley commenced survey of the Trent and Mersey Canal for Earl Gower, Josiah Wedgwood and Thomas Bentley. (ref 1). He also produced his celebrated Grand Cross scheme which linked the Trent to the Severn and the Mersey to the Thames in a St. Andrews Cross intersecting near Lichfield. In 1769 he published a large and beautiful plan in his own name with a dedication to the Duke of Bridgewater (ref 2). I discovered this with a whole collection of his maps. None of these had ever been published

previously, nor afterwards, but they can be seen, and their source discovered by anyone who cares to read my book.

July 1759 At Worsley 1759. 46 days preparing plans. (ref 6). The canal from Worsley to Salford, about 8 miles long, for which the Duke and Gilbert had prepared a scheme, was discarded by Brindley, and instead a strange dog-legged line crossing over the Mersey and Irwell, of 10¼ miles from Worsley to Manchester, was substituted, so that ultimately it could form part of the Manchester to Preston Brook scheme to join Manchester to the Trent and Mersey and the Grand Cross Scheme.

It will be noted that the Bridgewater was not Brindley's first scheme—note dates.

I will now give a list of engineers employed as assistants by James Brindley (ref 8): - John Henshall, Hugh Henshall, Hugh Oldham, Thomas Morris, Robert Whitworth, William Whitworth (bro.), T. Longbottom, Samuel Simcock, T. Dadford Sen., T. Dadford Jun., John Varley, Samuel Bull, Joseph Parish, Samuel Weston, - Townsend, - Churchill.

I can say something about each of these but a lot about many of them, where famous engineers like Whitworth and Henshall (Hugh) had their personal assistants as residents for limited districts, but Henshall and Whitworth both reported back to Brindley and have written about their relationship (ref 5). Hugh Henshall, who is buried next to Brindley, wrote the biographical account mentioned in my "Authorities" and described JB as a "gifted designer but not a very good organiser".

Brindley, like us all, had his idiosyncrasies. (ref 4). One was that in all his many aqueducts he never had parapets, but sad experiences by people or horses walking over the edge led to parapets being later added, often of brickwork on stone aqueducts. (ref 7). The Barton aqueduct later had posts and an iron rail added. The Marston aqueduct to this day has a hawthorn hedge planted, while on the Chesterfield the stone aqueduct near Worksop has a later brick one. I should like to have an example from the many canals said to have been designed by Gilbert of one such example.

Brindley and Gilbert were friends, not enemies. Although Brindley rebuked Gilbert when G tried to interfere in some incidental drainage work, they were also business partners. (ref 5). When in 1760 Brindley, his brother John, the potter, Thomas Gilbert and Hugh Henshall bought the Turnhurst Estate and in particular the Golden Hill Colliery for £2,137-6s-8d in 1760, a quarter share cost Brindley £534-6s-8d. and he sold part of his share to John Gilbert for £109.5s.

In 1760 Brindley bought the Longport pottery in partnership with his brother John. After their deaths it became Davenport's.

At one time in 1769, 500 miles of canal were under construction at an average cost of £2000 per mile, totalling about £1,000,000 (ref 3). Select a factor to multiply for modern construction at present day prices, and remember that Brindley with his large staff was in charge of these simultaneously. It becomes fantastic to suggest that with the Bridgewater as only one of these he was acting as a mere supervisor under John Gilbert's control!

As an item of interest, James Brindley was the father at 5 removes of Arnold Bennett in whom the family genius reappears in a different form with his five town stories, in which he shows many of Brindley's descendants living their lives, unaware that they were being watched by subsequent generations, between 1867 and 1933!



## DREDGING WILL "OPEN UP" THE ERIE CANAL TO FULL COMMERCIAL USE

From the Spring 1995 issue of "THE CANALER" official publication of the New York State Canal Corporation, a subsidiary of the New York State Thruway Authority.)

A common theme was heard at two conferences held by the New York State Thruway Authority/Canal Corporation in March with representatives of the commercial shipping industry. The Canal System can be a viable and significant component of an intermodal network for commercial transportation.

A key ingredient to reinvigoration of the system will be the re-establishing of consistent and reliable water depths by accomplishing dredging program goals over the next several years.

One meeting, held in Syracuse, was co-sponsored by the Syracuse Metropolitan Development Association, and the other, held in New York City, was co-sponsored with the Port Authority of New York and New Jersey.

"The meetings were very important," said John Baniak, the Thruway's Director of Operations. "A primary objective of these meetings was to listen to the shipping industry and other experts to help determine the viability of the Canal System as a commercial inland waterway. It was very exciting to hear a consistent enthusiastic response from such a diverse group of shippers, port managers, waterway operators and knowledgeable researchers. What we accomplished was the establishment of an excellent dialogue which we intend to continue and expand upon. We are encouraged that effective partnerships can be developed."

Shippers say the most pressing issue on the canal system is the need for dredging. A dredge is a vessel which scoops or sucks up mud and sand from the bottom of a river or canal to clear channels and harbors. Without a uniform depth of 14 feet, many of the commercial vessels cannot navigate through the canals.

"This was no surprise to us," said Patrick Garvey, Director of Canal Planning for the Thruway Authority. "When I first took this job I had a bumper sticker made up which hangs prominently in my office. It reads: It's the Dredging Stupid!"

Canal Corporation officials have long been aware of the dredging needs and recently achieved a major milestone. In years past, dredging permits from the state Department of Environmental Conservation and Army Corps of Engineers took a year to obtain and were good for only one year. Over the past year, Canal Corporation officials were able to persuade the DEC and U.S. Army Corps to provide five-year dredging permits.

"These new permits will allow us to dredge about 90 percent, or about 3.5 million of the 3.9 million cubic yards of silt that we need to remove," said John Jermano, Director of the Office of Canals. "Another 250,000 cubic yards of dredging is pending authorization and less than 200,000 cubic yards remains in jeopardy because of PCB contamination in the upper Hudson River."

Dredging the Canal System will require an investment of millions of dollars. Will significant traffic come to make the investment economically feasible? The conferences provided information that suggests the answer is yes.

The lack of interstate traffic did not stop New York State from building the Thruway network, but yet once it was built, the traffic followed. And once the railroad system was built, interstate travel really began to flourish. And the building of airports changed travel forever.

The original Erie Canal provided a tremendous stimulus to the nation's economy. The Erie Canal and the adjoining canals made New York State the economic powerhouse that it is. Within 25 years, the population of Albany and Troy grew to five times of what it was before the canal opened. Syracuse's population grew tenfold; Buffalo twenty

fold; and Rochester grew by 24 times its pre-canal population. Even states bordering the Great Lakes—Ohio, Indiana, Michigan, Illinois and Wisconsin—swelled in population. And despite myths about stagecoaches, during the Erie Canal's heyday, most of the migration West traveled through the Erie Canal.

Before the canal was built, New York City was the fifth busiest port in North America. Within 15 years of the canal's opening, New York City went from number five to number one, moving more tonnages than Boston, Baltimore, and New Orleans combined. It was thus that New York became known as the Empire State.

The canal system was reconstructed beginning in 1905 to accommodate barges and larger vessels. Although it evolved from the Erie Canal, the Barge Canal was distinct. Rather than building an artificial channel along high ground, it used the lowest watercourses in valleys wherever possible. For example, from Troy to Rome the Barge Canal is largely the Mohawk River.

Proper depth was obtained by building dams and locks and dredging channels. The dams maintain the surface of the water at a fixed elevation above the beds of the stream making the river into a series of pools, or lakes; the locks provide for passage from one level to the next, and the dredging provides a uniformity in the width and depth of the channels.

As a result of the new canal, traffic began to increase and reached a modern day peak of 5.5 million tons in 1951. But after that, commercial traffic on the canals declined in the modern era for various reasons: competition from the railroads; development of an interstate highway system and the advent of high-speed tractor trailers; the opening of the St. Lawrence Seaway to large ocean going bulk carriers; the advent of pipelines to transport petroleum products, and a failure to in-

*(Concluded on Page Eleven)*

## AMERICAN QUEEN'S MAIDEN VOYAGE



The American Queen, latest and largest of the Delta Queen stern-wheeler steamboat series, got stuck on a sandbar on her maiden voyage up the Ohio River, near Cincinnati. It took several days of digging and dredging to get her off. No word about what happened to her passengers while she was immobile! Apparently no serious damage was done as we just had a card from Bruce Russell who later rode the "Queen" from St. Louis to Hannibal (Mo.) on the Mississippi.

## CANAL SOCIETY OF NEW JERSEY TOURS CHENANGO AND ERIE CANALS



**We enjoy a dinner cruise at Camillus Erie Canal Park. Dr. Dave Beebe is at the helm. (Linda House photo)**

*By Linda J. House*

On an overcast morning the Canal Society of New Jersey set off on a three-day trek (May 5-7, 1995) to explore the Chenango and Erie Canals. Enroute across New Jersey, from our vantage point on Route 80, Vice-President Bob Barth pointed out sites along the Morris Canal, including Waterloo Village, Wharton, and Ledgewood. As we passed through the Delaware Water Gap the sun broke through, signalling the start of a bright, warm weekend (in keeping with the author's promise that "it doesn't rain on Canal Society trips").

At Binghamton, we picked up two more of our members and our guide, Michele McFee, author of *Limestone Locks and Overgrowth: the Rise and Descent of the Chenango Canal*. The Chenango was one of several lateral canals which allowed people in the less settled areas of the state to have access to the Erie Canal. Opening in May of 1837, the waterway was known as the best built canal in New York State. In its 97 miles, the canal required 116 locks to overcome changes of elevation which totaled 1006 feet. From Utica to the summit at Bouckville alone, 76 locks were needed in a span of only 23 miles.

Just northeast of Binghamton, our tour began at the Chenango Valley State Park. During lunch, Michele presented a slide program to give us an overview of the canal; she included historic photos and maps, as well as current views. The state park contains a watered section, which passes through the golf course (Watch out for those golf balls!), and a concrete-reinforced culvert which carried a stream under the canal.

About a mile north of the park, we viewed the guard lock, which allowed boats to enter (and leave) the canal from the Chenango River. Adjacent to the guard lock are the remains of Lock 111. We continued to follow the canal north, crossing and recrossing the prism. At the town of Greene, we stopped to photograph the abutments from the aqueduct which had carried the canal across the Chenango River.

ple from the local middle school and the Future Farmers of America have cleared two and one-half miles of towpath for use by joggers, hikers, and fishermen. Before taking a short walk on the towpath, CSNJ members presented a certificate of appreciation to the Chenango Canal Association for its preservation work.

Saving the best for last, we visited the outstanding site of Lock 68. The lock still displays "the superb workmanship unexpectedly intact for a structure over 150 years old...the stones still in place are straight and firm. The scale of the stonework, more than a hundred feet long, is a great contradiction to this site hidden in the wilds."

Our first day culminated with a stop at the Musical Museum of Deansboro, a unique, hands-on museum at which visitors may crank, pump, and play their way through a "Marvelous Musical Menagerie" of restored mechanical music makers.

On Saturday, we began our tour of sites on the Enlarged Erie Canal with a stop at the Butternut Aqueduct. This beautiful stone-arched structure carried the Erie over the Butternut Creek, near the village of Dewitt.

Farther east, we stopped at the Chittenango Landing Canal Boat Museum, where volunteers are restoring a three-bay dry dock in which canal boats were built and repaired during the late 19th and early 20th centuries. In 1992 a reconstructed store/warehouse was dedicated; it serves as an interpretive center and museum of canal life. More recently, the volunteer staff completed a saw mill/woodworking/blacksmith shop, in which tools and parts were made to build and repair the boats. Our group was treated to a first-person interpretation, a slide program showing the history of the site and the reconstruction work, and a tour of the outdoor sites. Chittenango Landing is an outstanding example of the work that can be accomplished by a dedicated volunteer and community effort.

Leaving Chittenango, we returned to the city of Syracuse for a visit to the Weighlock Building, which houses the Erie Canal Museum. After an introductory film, our members explored the reconstructed canal boat, the weigh master's office, and exhibits showing the history of Syracuse.



**Well-maintained culvert under the Chenango Canal at Chenango Valley State Park, Chenango Forks, N.Y. (Linda House photo)**

Our last stop on Saturday was the Camillus Erie Canal Park, just west of Syracuse. Here, Dave and Liz Beebe and a small army of volunteer guides showed us still another example of a successful volunteer effort. For twenty years, the folks at Camillus have worked to clear and water seven miles of canal; they have built a replica of Sims' Store and are currently working to restore the beautiful 1844 Nine Mile Creek Aqueduct. The park has two pontoon boats to take visitors to the aqueduct; a third boat takes guests on a dinner cruise, with a delicious meal catered by a local restaurant. The park also has several miles of walking trails, including one that parallels a section of the original Erie Canal, or "Clinton's Ditch". Our hosts had arranged our schedule so that we would walk the trails, ride to the aqueduct and enjoy a dinner cruise.

The final day of our tour began with a two-hour cruise on the *Liberty*, from its base in Lyons to Newark. Our hosts, Dave and Barbara Conroy, welcomed us with coffee and pastries as we set off to see the aqueduct and the dry dock in Lyons. Since Dave is a former superintendent on the Barge Canal, we were treated to a tour, at Lock 28, of one of the original hydro plants. Nearby we examined remains of a double lock from the Enlarged Erie.

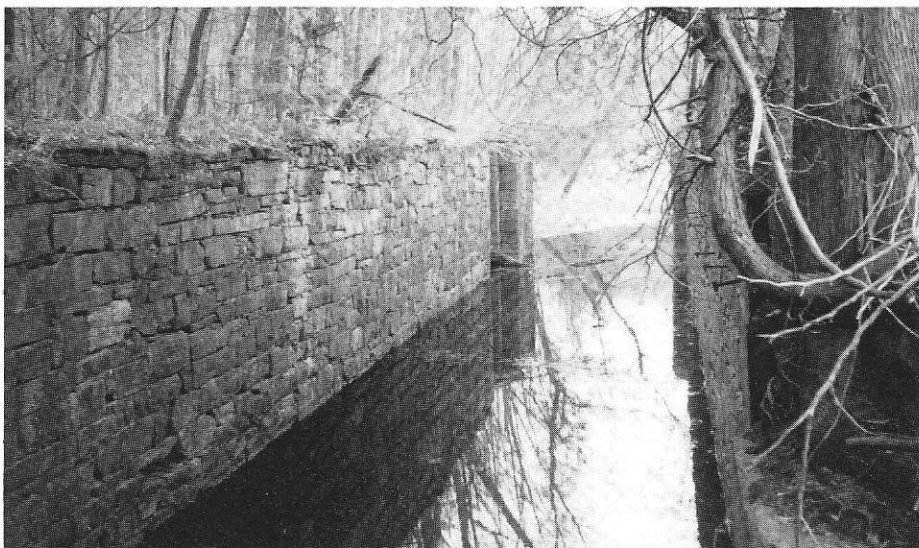
Enroute back to New Jersey, we made a final stop at Steamtown National Historic Site, in Scranton, Pennsylvania. A short steam train ride brought us to the restored roundhouse of the Delaware,



**CSNJ members board the LIBERTY at Lyons, NY, for a cruise along the Erie Canal to Newark. (Linda House photo)**



**Two views of Lock 68 on the Chenango Canal at Bouckville, N.Y. (Linda House photos)**



Lackawanna and Western, centerpiece of the site. Exhibits are currently being readied for the grand opening of the museum in early July.

Canal Society members returned home on Sunday evening, tired, but happy, with fond memories of the Chenango, Erie and New York State Barge Canals.

## **DREDGING - ERIE**

*(Concluded from Page Nine)*

clude ports and waterway in developing inter-modal capabilities.

In the 1990s, about 95% of all America's trade still moves by ship. Inland water transport is the least expensive mode of transporting bulk commodities, with costs averaging 10 times lower than trucks and 4 times lower than rail.

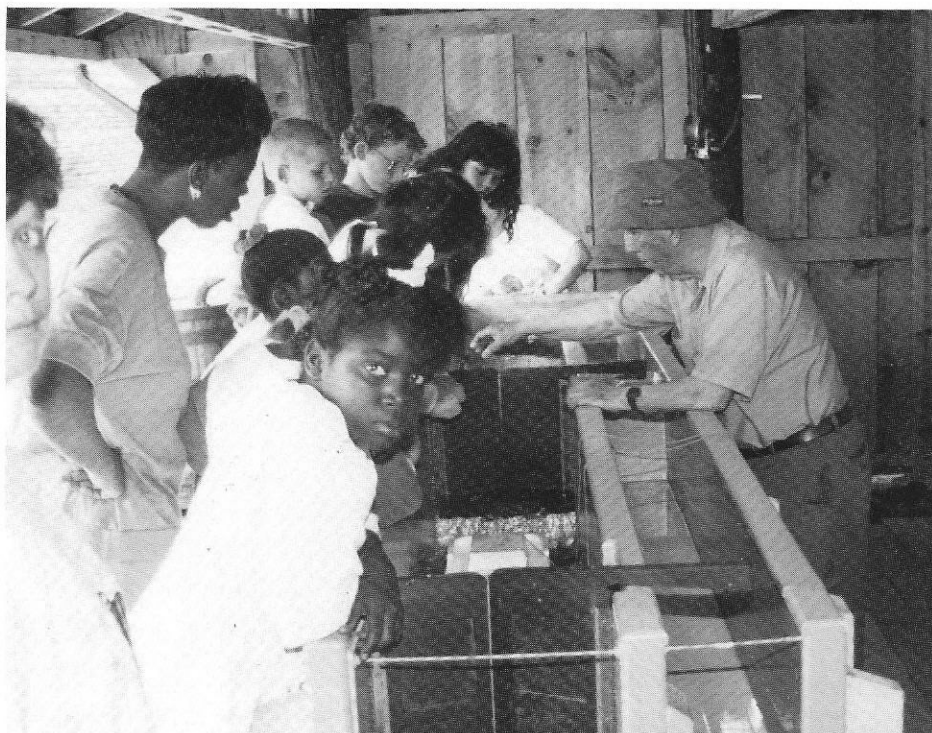
The port of New York and New Jersey is the third busiest container port in the country, just behind Los Angeles and Long Beach, California. While much of the California traffic comes from Asia via the Pacific Ocean, some Asian shippers are rediscovering the Suez Canal and the Mediterranean/Atlantic Ocean route to America. Thus rehabilitating New York's canal system is clearly a viable transportation option.

The Council of Upstate Ports of New York points out that they play an important role in the upstate economy with a nearly \$500 million economic impact.

With 524 miles of canal system and 85 commercial barge terminals with 56 square miles of real estate, the Canal Corporation is eager to help the upstate ports and commercial shippers. Tonnage wise, the port of Albany had its best year in over a decade in 1994. A successful dredging program would clearly help the ports of Oswego, Ogdensburg, and Buffalo as well.

For more information on the Canal Corporation's efforts to revitalize commercial shipping on the New York State Canal System, call Patrick Garvey at (518) 436-3128. Or, for information on how to obtain a commercial shipping pass for the canal system, call Canal Traffic Agent Michael Monahan at (518) 471-5016.

## WORKING LOCK MODEL IN CAMILLUS, N.Y.



The new, fully-operating "hands-on" lock model at Camillus, New York.

By Fenton Hanchett

Local volunteers in Camillus designed and built the lock during the winter of 1993-94 and put it into operation in the fall of 1994. In designing the lock, it was felt that it was important to make it large enough to get a good "feel" of all aspects of lock operation and to make it durable for operation by young and old.

The model is sixteen feet overall length, three feet wide, and three feet high. The lock chamber is four feet in length, fourteen inches wide and has a lift of twenty-three inches. There is a by-pass flume around the lock to allow for upper level overflow. The upper and lower levels are each six feet in length. A model canal boat is sized to fit in the lock chamber. The lock structure was constructed of wood using 2"x10" planking on the bottom and side walls with external 2"x4" vertical supports on 24-inch centers. The interior was lined with plywood, seams were sealed with marine sealant and painted with enamel. The lock miter gates were constructed of aluminum plate and redwood. Circular openings in the gates with slide gate closures simulate water valves; these operate by linkage to the top of the miter gates. The openings are sized to provide a three minute fill and discharge of the lock. The water carrying capacity with a full lock is 211 gallons; 137 gallons when the lock chamber is empty.

The whole unit is located out of doors under a lean-to type structure. Water is pumped to a distribution box that overflows to the upper level holding chamber; overflow from the lower level chamber overflows back to the same stream.

This lock display is the first section of an outdoor interpretive center that will eventually include a working model aqueduct and recovered artifacts from our Nine-Mile Creek aqueduct and Lock #50. This first step was funded in part by the Central New York Community Foundation, Inc.

Each year we host over 2000 school children and the model lock is part of the lecture and tour.

## PORTAGE CANAL

*Lawmaker proposes Portage to Green Bay Park System* is the headline in the Oshkosh Northwestern daily newspaper.

To quote from the Northwestern: "according to assembly majority leader David Prosser, a vacancy in the U.S. Army Corps of Engineers is holding up the efforts to establish a system of parks between Portage and Green Bay. The main block to the continued talks between the state and corps officials is the vacant office of assistant Secretary of the Army for Civil Works. That post is filled by an appointment by the President, but the Clinton administration has not taken the first steps in filling the post, the filing a notice of intent to make an appointment."

In the absence of such an appointment, no workable arrangement can be made with the corps.

The Fox River Heritage Park System as proposed by Prosser would consist of 26 small parks using the Fox River locks and other sites. At one end would be a park in the Portage area where the locks and canal linked the Fox and Wisconsin Rivers for shipping and the other end would be Heritage Hill at Green Bay.

Several communities are supporting the state park. After gaining more local support, officials plan to join Prosser and Governor Thompson in asking the Department of Natural Resources Board to endorse the park proposal.

A number of the locks along the Fox River have National status as does the Portage lock and canal. Citizens of Portage, let's join in this worthwhile endeavor—a Portage Canal Park!

Frederica Kleist  
Oshkosh, Wisconsin

## Chesapeake & Delaware Canal Disaster NY Times, 24 August 1873

### CHESAPEAKE AND DELAWARE CANAL BANK BREAKS

Twenty-Nine vessels wrecked and sixty-eight stranded—injury to the Canal—Peaches.

*Special Dispatch in the New York Times.*

Wilmington, Del., Aug. 23, 1873.—The damage to vessels and canal barges in the Chesapeake and Delaware Canal includes eleven schooners and eighteen barges hopelessly wrecked, while twenty-eight schooners and thirty-seven barges, two tugs, and one propeller steamer are stranded, and most of them more or less injured. Among the schooners which are very badly injured are the Jane C. McShane of Philadelphia, total loss; Lavenia Hopkins, Yorktown, Va., hole stove in side; Mary Washington, of Baltimore, split through the stern; Panama, Baltimore, on her beam ends, her bulwarks torn off, and otherwise injured, and the Speed, of Baltimore, badly wrecked generally. The last vessel is the one which was carried furthest up into the fields. She now lies 400 yards from the canal. All the craft east of St. George's escaped serious injury. The canal authorities hope to get them out in ten days or a fortnight. Those at St. George's, not carried out of the canal, may be released in a month's time. Many of the schooners and most of the barges were loaded with bituminous coal, consigned to New York, principally for the New York Central and Hudson River Railroad.

It is now improbable that passenger trains can make regular trips over the Delaware Railroad before Monday or, possibly, Tuesday.

Peaches are being carried to the towns on the Chesapeake and Delaware Bays, and shipped thence by water. Many will thus be marketed.

The Chesapeake and Delaware Canal is the only inland water communication between the

Chesapeake and Delaware Bays, and is about fourteen miles in length and consists of two levels, with a lock at St. George's and one at each end, via, Chesapeake City and Delaware City, the level between St. George's and Delaware City being called the lower level. About ten days ago the guard bank broke on the lower level, and let most of the water out of that portion of the canal. Consequently, a greater number of vessels were in the canal at the time of the last accident than otherwise would have been, they having accumulated for a week past on the upper level at St. George's waiting to lock through. The ground being

Although the canal is very much damaged at St. George's, the greatest loss is at the crossing of the Delaware Railroad. The upper level of the canal is fed at the railroad crossing by a very large pond, which covers over 500 acres of land, called Lum's Pond. When the water had lowered in the canal, the pressure of water in the pond became so great that at 2 o'clock this morning the bank gave way, and all the immense volume of water in the pond went tearing through the canal bank, the bank of the railroad, and a sixty-foot guard-bank above the railroad, depositing all the earth torn away in the canal. A stranger looking at the place could not tell where the canal had been, except by seeing the top of an occasional telegraph pole. About seventy-five yards of a thirty-foot embankment of the Delaware Railroad is washed into the canal, which will cause serious delay to the railroad. It is impossible to estimate the loss to the canal company, but nearly half a mile of new canal will have to be dug, and the injury to the banks the whole way is very great.

*Publisher's Note:* Improvements in the early 1900's have eliminated all locks on this canal, so there is no possibility of a similar break at present.