AMERICAN CANALS

BULLETIN OF
THE AMERICAN CANAL SOCIETY

BULLETIN NUMBER 85 Editorial Address—968 Chapel Road, Monaca, PA 15061 **MAY 1993**

President's Message

The latest issue of British Waterways' newsletter *New Ways* is part of Britain's CANALS 200 celebration, complete with a bumper sticker for your minivan. What happened in 1793? The National Waterways Museum in Gloucester put it this way:

In France the King has lost his head.
Guillotined in the Revolution.

In Britain the King has lost his head.
He is a certified madman.

In England the people have lost their heads.
Caught in the Mania to build canals.

The CANALS 200 mania will be celebrated as only the Brits can do it, with events this year and next to bring attention to the British canal system — the world's largest canal park. For more about CANALS 200 write Customer Services, British Waterways, Willow Grange, Church Road, Watford WD1 3QA, England.

CANALS
British Waterways
200

Closer to home, I looked up "canals" in the *New Yorker*'s 1992 index. The only entry under that subject is the "Canal Surplus store" in the August 17th issue, page 24. Well, we could always use an extra miter and a gate pocket or two, but it turns out to be an electronics and parts surplus store on Canal Street in New York, an essential place for the makings of gadgets. When you go there, try asking them for a "sloped level."

For several decades, Leslie Swanson's 42-page book, *Canals of Mid-America* has been the classic reference on America's mid-western canals. Recently the January 11th *Waterways Journal* revealed that Les is also the best-known calliope player in the country (with a book, *Steamboat Calliopes,* on the subject) and has a band called the "Social Security Swingers"! Les helped launch the Mississippi riverboat gambling era by playing the calliope on eight different boats so far, and on national television on "Good Morning America." Both of the above books are still in print, the canal one last rewritten in 1986. His address is P.O. Box 334, Moline, IL 61266.

(Concluded on Page Two)

"SPRUCE GOOSE" TRAVELS THROUGH WILLAMETTE FALLS LOCKS

The "Spruce Goose" enters the Willamette Falls Locks. Photo by Bill Johnson

Oct. 15, 1991, the U.S. Army Corps of Engineers' Willamette Falls Locks became history. They were formally designated as a State Historic Civil Engineering Landmark by the History and Heritage Committee of the American Society of Civil Engineers. Constructed in 1870 and opened on New Years Day in 1873, the Locks are the oldest locks in the West in operation today.

Dec. 17, 1992, history happened again, as the world's largest airplane, Howard Hughes' Hercules HK-1 Flying Boat, traveled through the Portland District Willamette Falls Locks, on its way to McMinnville, Ore.

"When the locks were built in the 1870s, who would have thought they would be moving the body of the world's largest airplane through it?" said one Corps employee as he watched the flying boat, better known as the "Spruce Goose" approach the lock chamber.

John Wasson, Portland District's project manager at Willamette Falls Locks, however, had been preparing for the journey for quite some time, measuring the locks time and time again to assure a safe passage. Despite careful calculations, one tiny glitch developed—the river was lower than ideal.

"We're doing it a little different—with one of the lock gates open," Wasson said, as he made final preparations for the wooden Spruce Goose to travel through.

Normally, a vessel will lock through each of the five locks one at a time. When in the first lock, miter gates on the downstream end of the lock chamber close to hold incoming water, raising the vessel

(Concluded on Page Two)

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 ($14 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

(Concluded from Page One)

Thanks to Bill Dzombak, the new editor of *Canal Currents,* our quarterly now has its own International Standard Serial Number, or ISSN. An ISSN costs nothing, but without it a periodical can be officially invisible to libraries, abstract services, and post offices. So ask your local library to subscribe to *American Canals,* ISSN # 0740-588X, and give your own canal periodical a number by asking for an ISSN Application Form from the Library of Congress, National Serials Data Program, Washington, DC 20540.

Did anyone tape "Three Men in a Boat" or "Swing, Swing Together" from the TV about ten years ago? Both of these exciting Thames Navigation classics, from books of the same name, deserve to be in canal museum videotape collections, but the BBC says it cannot supply copies. The first is Jerome K. Jerome's famous comedy which created so much enthusiasm for boating on the upper Thames when it was published a century ago, and the second is Peter Lovesey's well-researched novel set literally in the wake of all this excitement. Now what we need is an American equivalent of "Three Men in a Boat" to get people really excited about our canal history, preservation, restoration and parks!

When does a large lock use less water than a small one? The April 26 *Waterways Journal* reports that the Columbia River's new Bonneville Lock, which opened March 29, takes 38 million gallons to fill. The old one required only 17 million gallons, but a standard tow (called a "four banger") took four lockages, so the new lock saves 30 million gallons and a lot of waiting. The same issue reported the discovery of a 30-foot lizard on the bank of the Tenn-Tom Waterway. However, scientists have determined that the lizard died a few million years ago so no travel alert has yet been issued.

Bill Trout

"SPRUCE GOOSE" THROUGH WILLAMETTE FALLS LOCKS

(Concluded from Page One)

to the next lock. Then, upstream miter gates open, allowing the vessel to travel to the next lock, and so on.

On this occasion, however, the water level was too low to allow the Goose's nose to pass over the top of the second gate. Both the first and second lock chambers had to be opened, leading to another possible glitch. Rock, shale, logs and bark lay at the bottom of the chamber where smooth concrete surfaces rest in modern locks.

Made from native stonework ranging from five to 15 feet, which remain watertight after 120 years, the locks reflect construction methods before concrete technology was developed.

The challenge to filling both chambers at the same time was keeping the "bottom" of the second lock from travelling with the incoming water to the first lock and lodging underneath the barge or against the 3-foot sill elevation of the second lock gate. Only one other time had two lock gates been open at the same time.

"If we let the water out and wash all that in, it could be a fiasco," Wasson said. With the same breath, Wasson added, "It's all going to pull together," encouraging himself and those nearby. "They have the most professional people [towing and barging it]," he said. "They" were Tidewater Barge Lines from Vancouver, Wash., "the biggest tow boating company on the Columbia," and Joe Bernert Towing from Wilsonville, Ore., he said, who were responsible for river travel of the flying boat.

Wasson's encouragement was right on. The "Spruce Goose," completed in 1947, finally approached the lock chambers, the "bottom" stayed put and onlookers seemed awed at the immense sight.

Pushed by "Rainbow B.," a green and white tug boat belonging to Joe Bernert Towing, the "Spruce Goose" floated regally above everything. The water slowly rose so that the barge and its cargo could pass through to the third lock chamber, where the water would rise high enough to place the barge at almost eye level, hoisting the goose far into the air.

The land travel, coordinated by Emmert International, will end when the "Spruce Goose" is delivered to the Evergreen AirVenture Museum, where it will stay until its own museum is constructed.

When it is fully assembled in the museum, its appearance will continue to be mind staggering, Gifford said, who saw the plane when it was assembled at Long Beach, Calif.

"You see those C-141s and think 'those are enormous,' then you see something like this that was invented 40 years ago . . . it dwarfed everything. I've never seen anything as large that had a service to it," he said.

Despite Mother Nature's attempt to botch the enjoyment with rain, wind and cold temperatures, the idea that history was being made in a very big way overrode the elements for many.

"It's a once in a lifetime . . . we'll never see a plane go through like this again," said Tom Currany of Dundee, Ore.

And he's probably right. The longest trip by the world's largest airplane through the oldest wooden locks will probably only happen once. And, after 120 years of operation, for the Willamette Falls Locks, that's all it takes.

AMERICAN CANAL SOCIETY

"WORLD WIDE WATERWAYS"

Thanks to good communication between Ron Oakley and Bill Shank, we are pleased to enclose, for ACS members in the USA and Canada, the second edition of "World Wide Waterways". This periodical is published by the International Committee of the Inland Waterways Association of Great Britain. We wish them well in their efforts to bring all of us global "canal-buffs" closer together.

A VISIT TO LOWELL

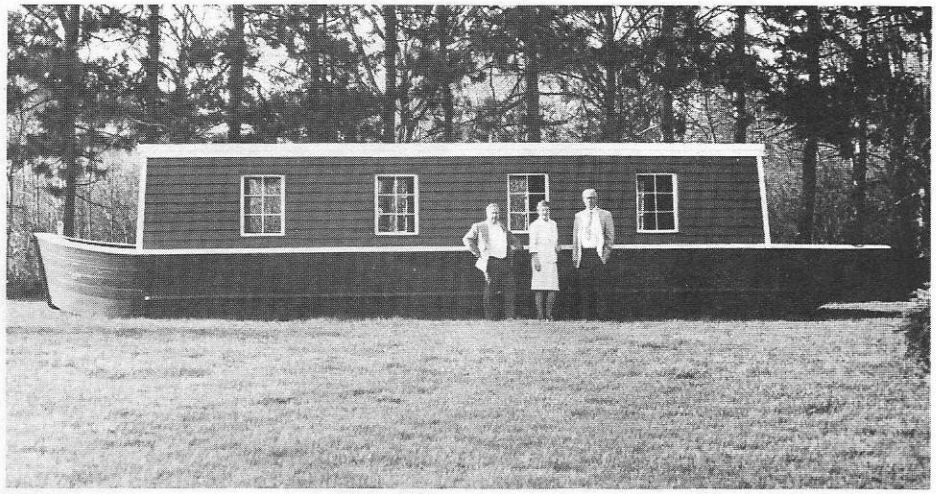
By Bill Shank

During the week-end of May First and Second, 1993, I was the guest of our esteemed ACS Vice President, Bill Gerber, of North Chelmsford, Massachusetts. In this two-day period Bill Gerber gave me an accelerated education in the Saugus Iron Works, the Charles River outlet locks at Boston, the Baldwin Mansion and the waterways system at Lowell, Massachusetts, including the Merrimack River, the Concord River, the Pawtucket Canal and the Middlesex Canal.

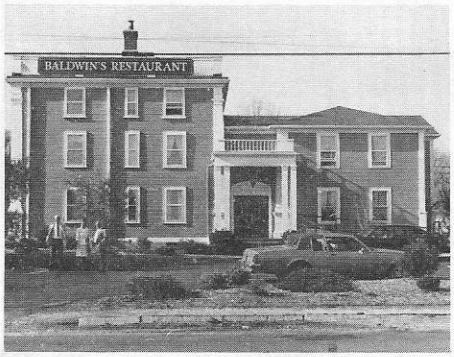
My main objective was to visit with the members of Middlesex Canal Association, at their annual meeting May 2nd, at the Wilmington Arts Center in Wilmington, Massachusetts, as their guest speaker. My subject: "The Amazing Pennsylvania Canals", which I presented as a slide show. I found a number of familiar faces in the audience, included Dave Barber and his wife; Col. Wilbar Hoxie and his wife, not to mention Bill Gerber himself, who was responsible for my being there.

The audience was most generous in their comments about my presentation and bought a quantity of *PICTURE JOURNEYS ALONG THE PENNSYLVANIA MAIN LINE CANAL*. Some signed up on the spot as members of the American Canal Society.

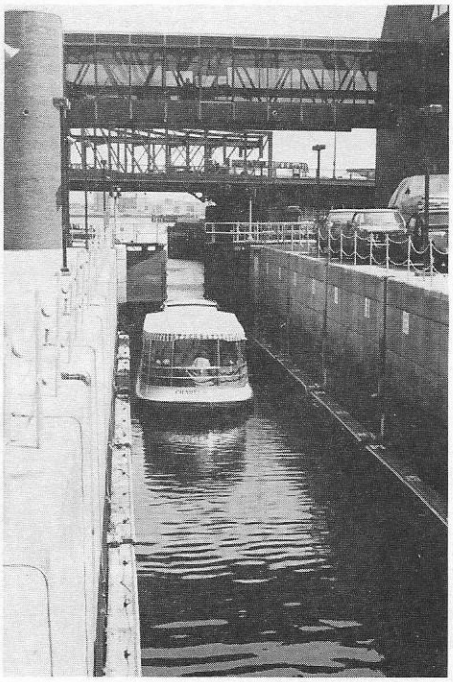
I managed to make a few photos during the week-end, some of which are shown here. I am deeply indebted to both Bill Gerber and the Middlesex Canal Association for their cordial reception. It just proves the old adage: "An expert is anyone 500 miles from home".



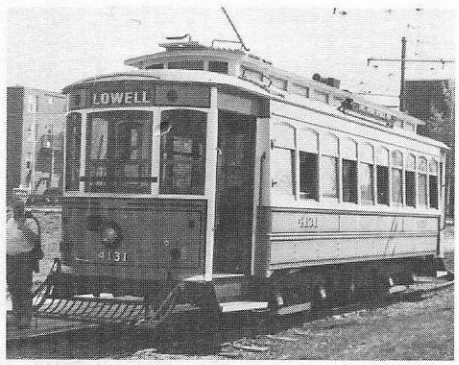
Several members of the Middlesex Canal Association pose in front of the "Colonel Baldwin" canal boat replica, which operates in the summer along a restored section of the Middlesex.



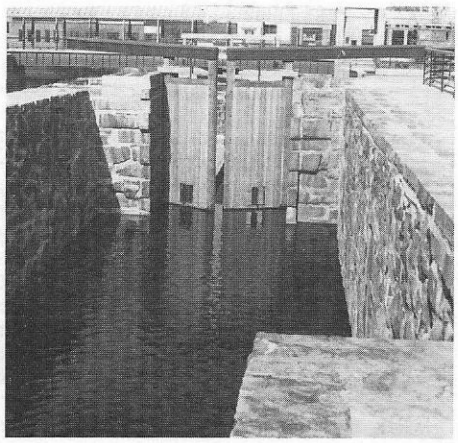
The Baldwin Mansion (now a fine restaurant) was the site for our dinner after the annual meeting of the Middlesex Canal Association. The Baldwin House was the home of Loammi Baldwin, Chief Engineer for the Middlesex Canal.



A boat passes through one of the tide-water locks on the Charles River in downtown Boston.



Bill Gerber next to the "cow-catcher" on the fully-authentic replica of an early street car which carries visitors around the Lowell Heritage State Park.



Restored lock on the Pawtucket Canal near the Sheraton Inn in downtown Lowell.

Bill Shank and Bill Gerber pose for the cameraman in front of the "Colonel Baldwin".

ADAPTING IN A CHANGING WORLD

September 29–October 2, 1993 — APT XXV CAN — Adapting in a Changing world, the Association for Preservation Technology International's 25th anniversary conference, will be held at the Chateau Laurier in Ottowa, Canada. The conference will bring together architects, engineers, conservators, historians, craftspersons, preservationists and other professionals involved in the maintenance and preservation of our built heritage. Training courses on *Historic Roofing* and *Masonry* and a colloquium on *Conservation Management* precede the conference on September 26–29, 1993. Among the unique preservation challenges is the ongoing repair and operation of the historic Rideau Canal system. For additional information, contact Robert Hunter, APT CAN Conference Chair, at (819) 997-6974 or FAX (819) 953-4909.

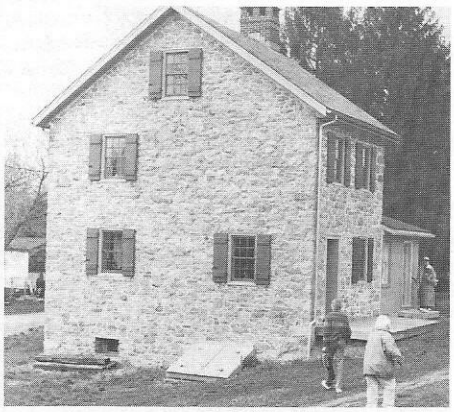
JOINT NEW YORK AND PENNSYLVANIA CANAL SOCIETY FIELD TRIP A SUCCESS

By Bruce Russell - Contributing Editor

On the weekend of April 16 and 17, 1993, the Canal Societies of New York and Pennsylvania ran a two day Spring affair which included a Friday night orientation plus slide show on Pennsylvania's Lehigh Canal, a Saturday field trip using chartered busses to visit several important sites on the remains of the abandoned prism plus various other points primarily connected with the mining and movement of anthracite coal, a Saturday evening banquet and slide presentation, and an opportunity to look at additional canal oriented materials at the Canal Museum located in Easton, Pa. on Sunday. Officers of both canal societies put a great amount of effort into this weekend outing, and most participants learned a considerable amount of history on both the Lehigh Canal plus the region it served for about a century. Special mention must go to Albright "Zip" Zimmerman, Lance Metz, and John Miller for their running commentaries about the various points of interest during the tour.

On Friday night most attendees viewed a slide presentation given by Lance Metz, who is no stranger to canal enthusiasts, historians, and industrial archeologists. He traced the development of the Lehigh Valley area from the mid-1700s when Moravian and German settlers began arriving, to the discovery of anthracite or hard coal which burns clean, to the initial surveys and eventual building of the Lehigh Canal and associated gravity railroad as a transport system for bringing the fuel out of the places where it was mined and to the major markets of New York City and Philadelphia. Lance explained that three artificial waterways met at Easton, Pa. Here a loaded boat or an empty could go in one of three directions. It was likewise explained that while the Morris and Delaware Canals were entirely man made channels or artificial rivers, the Lehigh Canal was a mixture of "cuts" or channels and so called "slack water navigation" in which a series of dams along the Lehigh River created artificial pools.

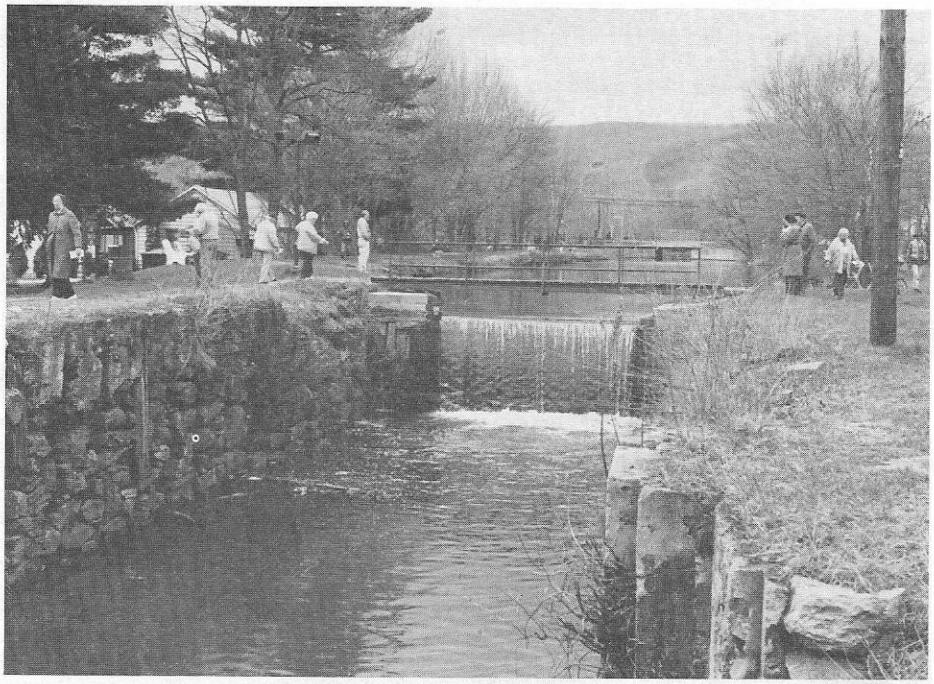
Also explained were the gravity railroads which constituted the earliest railroads in the nation. These lines, built during the late 1820s and early 1830s, were used to move coal from the mines to a point, usually at the foot of a mountain, adjacent to a canal. Here it was trans-shipped from railcars to canal boats for its onward journey to market. The gravity railroads used stationary steam engines to hoist strings of cars up mountains where they were then allowed to coast down the opposite side using gravity. They were both primitive and ingenious. Without them, the canal era would not have been possible since even the best canal engineers weren't able to design waterways to climb mountains.



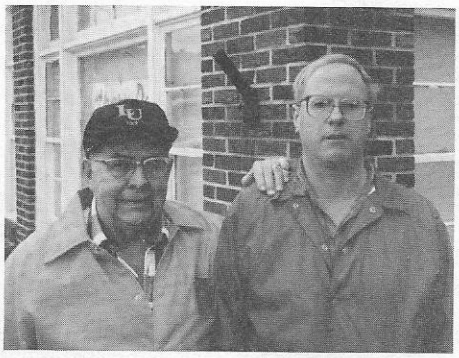
Restored lock-house at Walnutport.

The Friday evening orientation held at the Easton Inn was a thorough presentation and provided a background to what would be viewed on the Saturday field trip.

Saturday dawned sunny but blustery, testimony that Spring had not fully arrived in this portion of Pennsylvania on the periphery of the Pocono Mountains. About 85 people boarded two chartered busses and the tour began. Each bus had two members of the respective canal societies to provide narration and commentary. As we headed northwest we paralleled the Lehigh River which empties into the Delaware at Easton. It was explained that at many locations the road we were traveling over was sitting on top of the former bed of the Lehigh Canal. However at other places this was not the case and the remains of the waterway were evident. Although worn considerably the prism of the Lehigh Canal seemed intact. Here and there crumbling locks were likewise visible. The canal was last used about 1935 although a few segments lingered until 1942. As a through route for bringing coal from the mines to the cities on the coast it was finished by the mid-1930s since normal railroads had long since captured its business except for local customers. When the Morris Canal from Philipsburg (opposite Easton, Pa.) quit in 1924 there was no longer any through water route to New York City unless the Delaware and Raritan Canal much further south was utilized. When the Delaware Division Canal from Easton to points south ended operations all possible routes were closed. Thus the Lehigh Canal and its associated waterways went out of service within a 15 year period, ending what had been a colorful period.



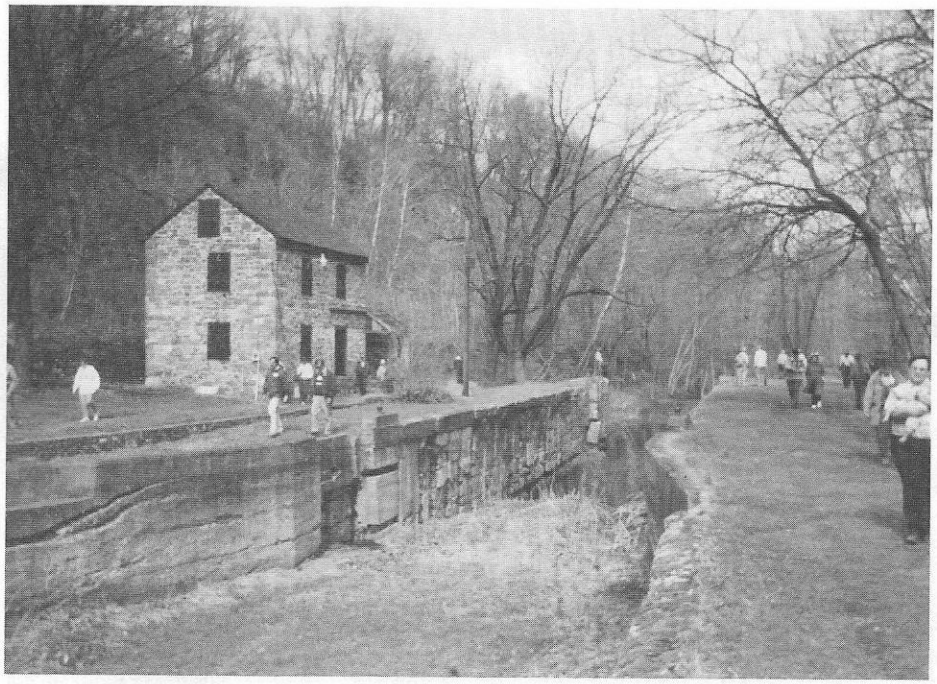
Restored section of the Lehigh Canal At Walnutport. A weir has replaced the upper lock gates.



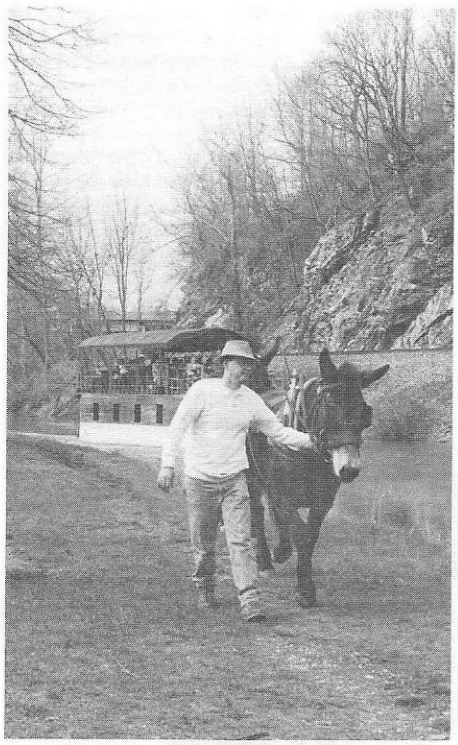
Bill Shank, Publisher of *AMERICAN CANALS*, with Bruce Russell, Contributing Editor of *AMERICAN CANALS*.

Our initial point of interest was Weissport, Pa. which was the location of major boat building and maintenance facilities. The Lehigh Coal & Navigation Company which actually owned the Lehigh

Restored coal-mine car in front of the Anthracite Coal Mine Museum in Lansford, Pa., originally owned by the Lehigh Coal and Navigation Company. (Russell photo)



The visitors look over the dry lock on the Lehigh just east of Freemansburg, with the partially restored lock house in the background. (Russell photo)



Visitors had a ride on the "Josiah White" canal boat at the Hugh Moore Park, on the lower Lehigh Canal.

Canal employed many local men to perform tasks associated with the waterway.

We then passed through the Lehigh River Gorge where a weigh lock of the Lehigh Canal was located. Entering Mauch Chunk, now called Jim Thorpe, Pa., the administrative building of the Lehigh Coal & Navigation Company was seen. Our tour came, however, not to admire old buildings but to take a look at what remains of the Switchback RR which transported coal from the mines across the mountains to the canal. We stopped our two busses where the sloping alignment of the railroad was still intact and plainly visible. A short section of narrow gauge track had been restored plus a replica freight car with seats for passengers. To thoroughly explore the right of way of this amazing 19th Century feat of engineering would consume two or three days. Nevertheless our brief stop afforded an opportunity to view something of this line. The Switchback gravity line remained operational until 1933, hauling tourists up and down the mountains. A visit of this location actually combined canal history with industrial archeology since both fields are involved.

The next place we came to was the town of Lansford, Pa. This was a community where many European immigrants lived and found work initially in the coal mines and on the gravity railroad and of course the canal. The group stopped at a restored chapel originally built about 1850 by Congregationalists. Abandoned and derelict for many years it has been put in good shape mainly by the work and dedication of volunteers.

Prior to lunch we spent about one hour at the Anthracite Coal Mining Museum located just outside Lansford. What had been the "wash shanty" for miners at a large facility has been turned into a series of exhibits on coal mining in the region.

Leaving the museum we headed to our lunch spot and enjoyed a buffet meal. After this we reboarded the busses and traveled parallel to the canal in the direction of Easton. We then stopped at Walnutport, Pa. where an 1828 vintage lock tender's house has been restored plus an adjoining lock chamber, minus working gates. Furthermore for approximately 4 miles the canal has water in it, thus making it look similar to the way it did prior to closure in the late 1930s. In the early 1950s a man by the name of Earl Snyder began to look into bringing back to life a small portion of the defunct Lehigh Canal so future generations could appreciate the great era of towpath canaling. The Walnutport Canal Association was created and in 1985 they purchased the diminutive stone lock tender's house and set about restoring it. The Lehigh Coal & Navigation Company maintained houses for its lock tenders as a kind of fringe benefit and of course to have them on site to work the locks.

After the Lehigh Canal ceased operation, the lock tenders still on the Lehigh Coal & Navigation Company's payroll were allowed to purchase the tiny homes where they lived and worked. Frank Kelchner, the last tender at Walnutport, did just this and he and his descendants remained until 1965 when others acquired it. At some point a small addition was added. Presently the Walnutport Canal Association owns and maintains the house as a museum open to the public. Our group had a chance to go inside the building and get a first hand glimpse of what it was like to live in the 1840s. Needless to say there was no central heating and toilet facilities weren't situated inside the home! This restoration is an example of just how much can be accomplished by dedicated volunteers.

The tour then passed through the village of Treichlers where many canal employees lived who weren't lock tenders. Canal captains made adequate incomes and many chose this hamlet to build homes and raise their families. In addition to anthracite coal, cement was also a major commodity carried on the Lehigh Canal. Several of the cement companies owned and maintained their own boats. After cement the next most common cargo was iron ore bound for the furnaces in and around Bethlehem. Some of the ore originated in New Jersey on the Morris Canal. It headed west to Philippsburg and then crossed the river to Easton where it was taken north on the Lehigh Canal to Bethlehem. During the first 25 years of its existence the Lehigh Canal also carried people in packet boats but this business was immediately lost to the railroads once the first rails were spiked down. Train travel was simply faster.

The next stop during the latter part of the day occurred at Freemansburg, Pa. where lock number 44 of the Lehigh Canal and its adjacent lockhouse remain in a semi-state of restoration. This house, like the one at Walnutport, dates from the 1820s and is of stone construction. An original structure, it serves as a living relic from a bygone

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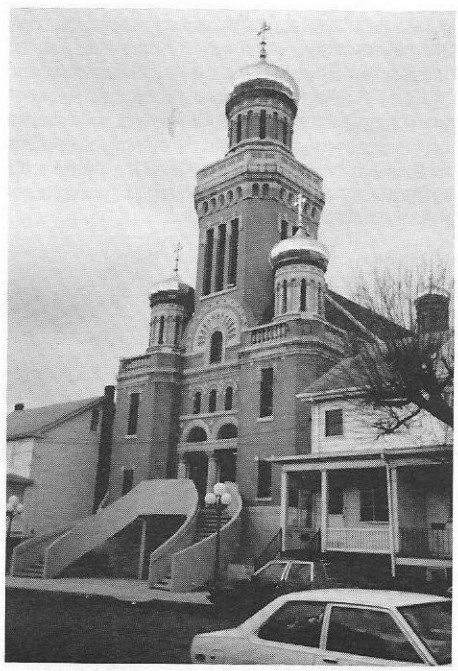


A Russian Orthodox Church in downtown Lansford, representing the wide range of immigrants who came here to work the mines, canals and railroads. (Russell photo)

PENNSYLVANIA CANAL TRIP

Walking along the abandoned right-of-way of the Switchback Railroad near Jim Thorpe. (Russell photo)

(Concluded from Page Five)

era. It is now listed on the National Register of Historic Places. At Freemansburg were also stables for mules and coal yards served by the Lehigh Canal. A group called the Old Freemansberg Association has charge of this historic site. The tour remained here for about 20 minutes exploring the entire premises.

The final stop of the day was at Hugh Moore Park where about 5 miles of the canal has been restored to its original appearance. During the spring, summer, and fall a pleasant ride is available aboard a replica packet boat pulled by a pair of mules. Called the JOSIAH WHITE after one of the principle figures of the Lehigh Canal, it takes passengers for a half hour trip up the waterway. Presently a new vessel is being built which will replace the 20 year old JOSIAH WHITE which is slowly deteriorating. It was a fitting way to conclude an excellent day's outing.

Later in the evening a banquet was held and the completed goals of the two canal societies were recognized. Members were able to reflect on the accomplishments made in the area of canal education, history, and preservation. America's towpath canal epoch was an exciting chapter in the nation's history.

Left to right: Clarence Stephenson, a past Vice President of the Pennsylvania Canal Society; Bill Dzombak, Editor of the PCS "Canal Currents"; "Genie" Walton; and Denver Walton, Editor of the "American Canals" Bulletin. They are standing on a canal bridge to the Walnutport Lock House.

A replica of one of the passenger-carrying cars on the Switchback, after it became a tourist attraction in the early 1900's. (Russell photo)

FLOATING ELEVATOR TRANSFERRING GRAIN FROM A CANAL-BOAT TO AN OCEAN STEAMER

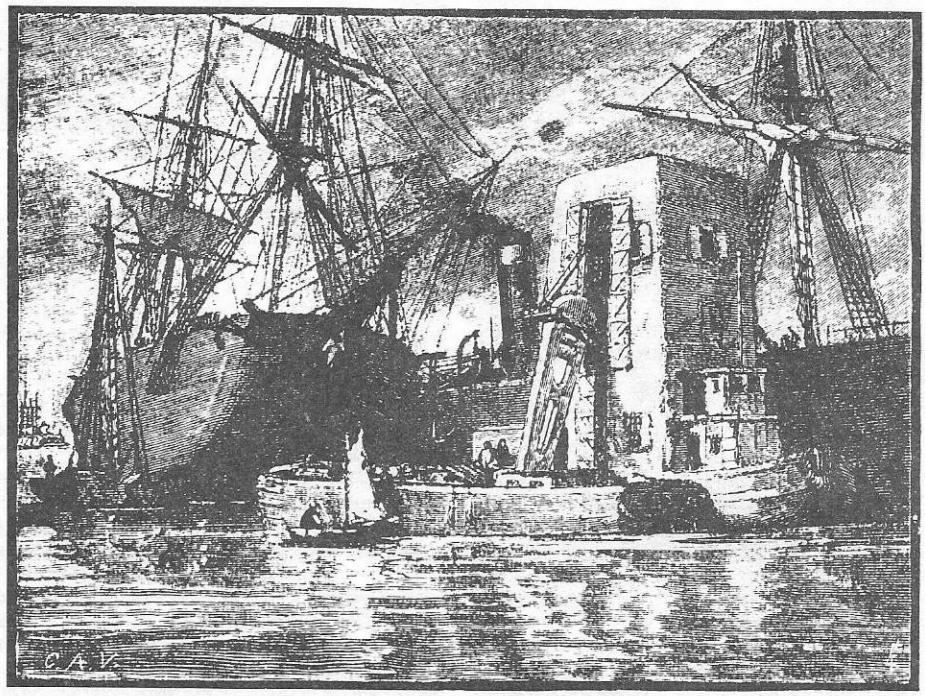
By Bill Trout

This drawing of a floating grain elevator in New York City was drawn by C.A. Vanderhoof for "A Day on the Docks," an article by Charles H. Farnham in the May, 1879 *Scribner's Monthly*. The drawing is from an original copy of the article sent to us by Bob Trbovich. The text on page 36 describes the scene:

"Ocean steamers occupy several consecutive piers below Tenth street and give their locality a distinctive character. I went on board one of the ships and looked down her hold, four stories deep . . . . [One] hold was like an ant's hill — swarming with men loading sacks of grain. An elevator alongside raised the grain from a canal-boat, and then sent it down a spout pouring two six-inch streams of wheat. A man opened and closed the valves of the spout while two adjusted the sacks under it; four sewed up the bags as fast as they were filled at the rate of about eight per minute."

The article also mentions unloading coal and cabbages from canal boats, and along South Street "There are also canal-boats stowed away here in a slip for the winter, while the captain and his family live in the cabin and enjoy a season of metropolitan life." And if you think we live in an age full of criminals, read this article to see what it was like on the New York docks in 1879. Sometimes the police got their man, as in this story told by one of the officers:

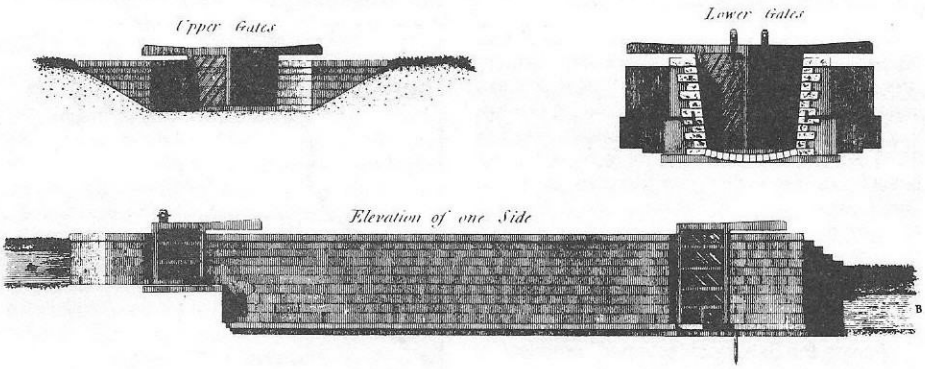
"Sometimes the thief saws part of a plank out from under a pile of goods and then fills his boat; or he bores an auger-hole up till he taps a barrel of liquor, and runs it into his own cask. They have a thousand tricks of the kind. One of us lately heard a man working at a pile of fruit. He soon filled his boat under a hole in the planking and then started away; but just as he came out from under the pier, the officer above dropped a slip-noose over his head and hauled him up to the dock, and that thief was about as much surprised as any man you ever saw."



Floating elevator transferring grain from a canal boat to an ocean-going steamer.

EARLY INLAND NAVIGATION IN ENGLAND

By D.S. Postle



Old etching showing lock details in "General History of Inland Navigation".

For several years I have been searching for published material that might have been useful to inexperienced men who had the responsibility for building canals in the United States at a time before there were any schools of engineering in this country. The challenges to these men were formidable — Knowing how to construct a canal prism that could retain water, a tow path that would not develop mud puddles, a lock wall that would remain nearly vertical when either full or empty, lock gates which fit well enough to form a seal but could still be operated manually — It would have been very discouraging and expensive to learn canal building by using only trial-and-error methods. The first canal structures in this country had a remarkably resemblance to corresponding structures that had been built earlier in England or France or Italy. Was this a coincidence?

In London, in 1792, John Phillips published a handsome book entitled *A General History of International Navigation.* This book could have been available in this country.

The first edition had a large fold-out map (2 ft. x 3 ft.) inside the front cover, and there were four engraved plates following the last chapter. The map identified in color the locations of the canals in England that were extant in 1792, as well as proposed construction. The four plates illustrated respectively; a lock, an aqueduct, a highway bridge across a canal, and a lift-type accommodation bridge which permitted access to farm fields that were separated by a canal.

In the early chapters, the book offered "an abridged history of inland navigation . . ." i.e. through about 1790. The author discussed evidence of attempts at canal building in the Middle East and Egypt—canals built for navigation, irrigation, and flood control. He devoted a separate chapter to the canals in China, although he admitted to not having visited China. Without saying that the Chinese canals did not use locks, he describes how they changed elevation between ponds by use of a water sluice. The boats were maneuvered into position by manpower using a sling arrangement with men on both ends of the sling, and then dragged up the sluice by hand operated capstans. He reported that boats were propelled on the canals by either oars or sails — no mention of towing animals.

In the chapter on canals in Russia, he reported that Peter The Great had been impressed by the canals he had seen in Holland. In his hopes of making Petersburg an important international city, he planned to connect Petersburg to major navigable rivers by a series of canals as well as by the canalization of existing rivers — a dream begun but not realized during the Emperor's lifetime.

By 1792, France had already constructed many of its canals, and the author used several pages discussing the Canal of Languedoc, or the Canal of the two seas, (The canal we know as the Canal du Midi). He described in some detail many of the canals in France, listing origin and terminal points, and suggested as several other authors have, that the British were very slow to take up the idea of canal building, being at least a century behind France in accepting the idea of enhancing inland navigation by building canals.

A large portion of the book was devoted to the canals of England identifying authorizing acts of the legislature, costs, mileage, etc.

He described in detail the development of the first modern canal of England, the Bridgewater Canal, constructed by the Duke of Bridgewater to transport coal from mines on his property to Manchester. He was elaborate in his praise of the Duke for having given to England and to the world the engineer James Brindley. Mr. Phillips credited Brindley as being . . . . "One of those geniuses which nature sometimes rears by her own force, and brings to maturity without the necessity of cultivation . . ." Brindley's method of draining coal pits with a fire engine — an overshot mill near the mouth of the subterranean passage — portable cranes to draw stones out of a quarry — his water bellows at the mouth of the cavern (for changing air in the depths of the coal mines) — all were considered to be remarkable inventions of Mr. Brindley.

Phillips extracted several particulars from the life of James Brindley using as his source *Biographia Britannica.* He then described several canals that were designed by and/or constructed by Brindley: The Trent and Mercey; the Grand Trunk Navigation; A canal from the Grand Trunk to the R. Severn; A canal from the Droitwich to the R. Severn; He designed the Coventry Navigation; Oxfordshire canal; and the canal from Chesterfield to the R. Trent.

In describing the existing and proposed canals of England, Phillips offered great detail of the nature of the produce carried, such as amounts in tonnage and value in pounds sterling, as well as details of the acts of Parliament authorizing their construction and use.

Chapters XI, XII and XIII, described the canals and the potential for canals in Wales, Scotland and Ireland.

Eleven pages of Chapter XIII were devoted to a discussion of the potential for making many of the rivers in the eastern U.S. — Navigable canals rarely entered this discussion.

In three short paragraphs, he admitted to having little knowledge of the continent of South America, so as to preclude speculation on the potential for improvement of internal navigation.

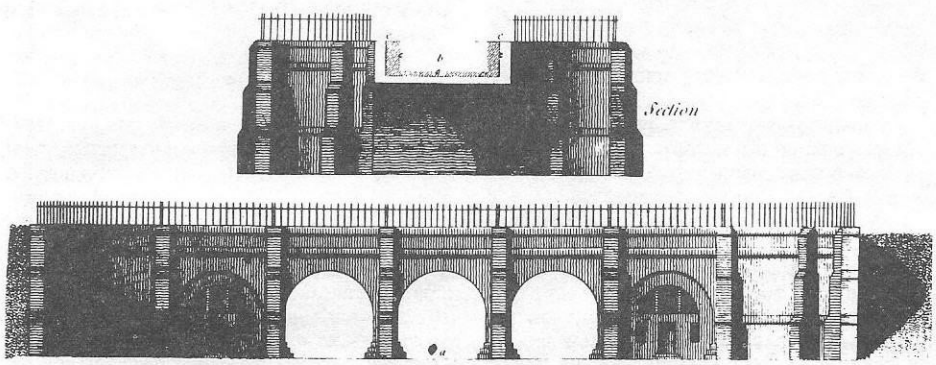
Although this book might hold limited interest for an inexperienced engineer with the responsibility for constructing a canal in a developing country, its practical usefulness as a how-to manual is limited to the contents of Chapter XIV, and the four plates at the end of the book — the plates may be of more help than the text. Although the subtitles to Chapter XIV sound promising of useful information, the details in the supporting text are scarce. Some examples: .

- 'The supply of water' description used three short paragraphs, in which he mentioned springs, reservoirs, rivers and steam-powered pumping. He suggested that a lockfull of water (125 cu. yds. water for a lock 75 x 7 feet with a 6 foot lift) must be replaced following each locking through.
- 'The nature of the ground to be cut through': The most favorable soil for holding water is clay; least favorable is sand. He did not mention puddling for the prism, yet in a description of the aqueduct, he suggested that the channel be lined with clay.
- 'A Lock': He suggested strong masonry or stout oak piles. Side walls and floor, if of wood, require dove tailed oak planking; floor must rest on oak sleepers. He recommended a maximum lift per lock to be 8 1/2 feet.

The four plates at the end of the book were handsomely engraved, and contain some useful detail — they represented what the finished product should look like. (see illustrations)

I found three features of the aqueduct in plate 2 to be of interest: The water channel in the aqueduct is lined with a 'punn' of clay, "to pre-

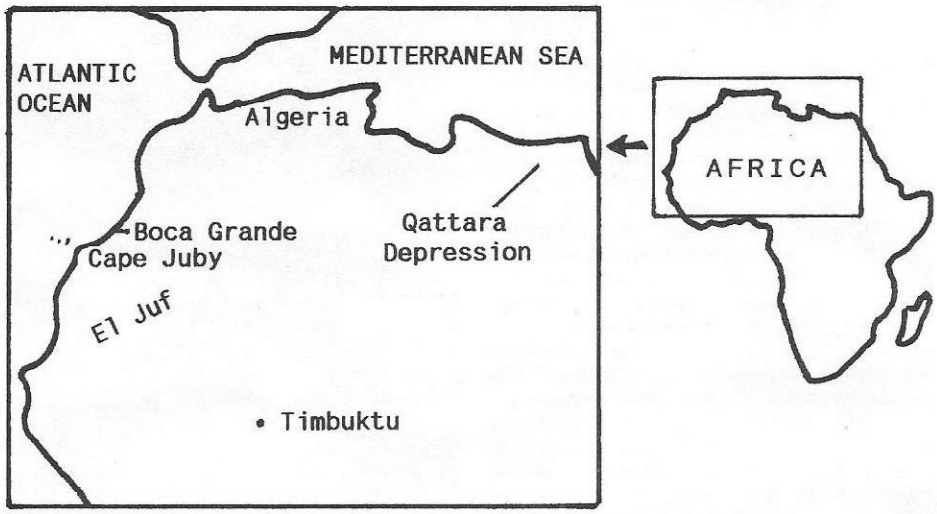
(Concluded on Page Eight)



Details of a typical English aqueduct as shown in "General History".

"ACROSS THE SAHARA BY STEAMER"

Edited by Robert L. Trbovich



A century ago, Ferdinand de Lesseps and other visionaries planned to build canals into northern Africa to flood hundreds of square miles of below sea-level desert. The excitement of the time is clear in the following article by John T. Short in the July 1879 *Scribner's Monthly*. In more recent times, Israel had a plan to run the Mediterranean into the Dead Sea - see the February 1978 *National Geographic*, p. 230. What we would like to know is, what ever happened to these bold schemes? And was de Lesseps aware of the Qatarra Depression? Here are excerpts from the 1879 article, entitled "The Flooding of the Sahara":

"Across the Sahara by steamer" promises at no distant day to be classed among the announcements of this age of mechanical and engineering triumphs. That the Sahara, the figure in the world's literature and oratory for barrenness and solitude, should lose its old character and put on a new one in contrast with the old, would be surprising indeed. The proposal on the part of English and French engineers to flood the great desert with the water of the ocean and of the Mediterranean, and transform its waste into a watery highway for the commerce of the nations, at first impresses us as visionary and impracticable. A thorough examination of the subject, however, has led some of the most eminent scientists to quite a different conclusion. . . .

Probably the most original and feasible plan for laying open the heart of Africa is that recently proposed by both English and French engineers. It is no less than the remarkable suggestion which furnishes the subject of this article. Mr. Donald Mackenzie, the English engineer, proposes to flood the Sahara from the Atlantic, while Captain Roudaire and M. de Lesseps, the French engineers, are now engaged in work of a preliminary character with a view fo admitting the waters of the Mediterranean to the basins of Tunis and Algeria. . . . A large part of this salt waste is known as El Juf, the great sink of the desert, being 200 feet below the level of the Atlantic. . . .

Explorers agree that a channel once connected its north-western extremity with the Atlantic Ocean, at a point near Cape Juby opposite the Canary Islands. This channel, called by the natives, Sakiet El Hamra, presents abundant evidence of once having admitted the waters of the sea. Its bed is encrusted with marine salt, and shells. On the Atlantic coast it terminates in a sand-bank which prevents the waters of the ocean from flowing into its bed. Its great mouth, — Boca Grande, — resembling a miniature Gibraltar, is formed between perpendicular rocks which rise to a height of 200 feet above the sea; it measures between the rocks two and a half miles in width, and is blockaded by the sand-bar above mentioned, which itself has a width of 300 yards across, and a height above the sea of thirty feet at the south side of the channel, and ten feet at north. . . . Thus it is believed that El Juf was separated from the ocean and became successively a salt marsh, and a sandy waste, whose surface is still covered with abundant remains of marine life. . . .

Since the bed of the channel is at present 200 feet below the sea-level, the water of the sea could be utilized for the work of cutting the canal after a small ditch had once been dug across the bar. The torrent which would pour through the opening would no doubt soon remove the greater portion of the obstruction. However, when the great inland basin had again been filled and the water level both within and without the great mouth had reached an equilibrium, it may be presumed that the same agencies which gradually built up the bar, namely, the tides and waves, would renew their work, and, if left alone, would probably in time close the channel and again reduce the Saharan sea to a desert. Still, the influence of these agencies could in part be counteracted by the current which must flow out of the channel.

The volume of the rivers which now flow into El Juf would no doubt be greatly increased by the additional rain-fall incident to the presence of so large a body of water. The action of the tides and currents could be guarded by breakwaters and entirely controlled by locks. . . .

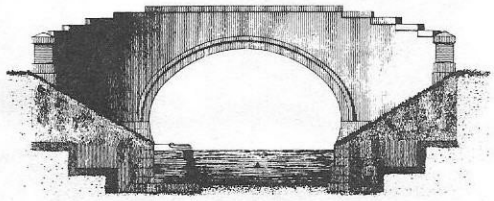
Were the Sahara flooded, and were it possible to steam from Liverpool or New York to Timbuctoo, the volume of trade would develop immensely. . . . Cape Judy is distant less than 800 miles from Timbuctoo. The depression of El Juf approaches within 100 miles of the city. The flooding of El Juf would consequently bring Timbuctoo within ten or twelve days' steam of Liverpool. Ultimately, no doubt, a ship-canal would be constructed between the sea of El Juf and the Niger.—a distance of 100 miles,—with which Africa will be thrown open to the world, and the "Dark Continent" will exist only as a dream of the past.

As previously intimated, the French engineer, Captain Roudaire, and the celebrated M. Ferdinand de Lesseps, whose energy and skill in the construction of the Suez Canal made Africa an island, are now taking steps with a view to flooding the *chotts,* or basins of Tunis and Algeria, from the Mediterranean. The exact extent of these depressions, if known, has not been publicly stated. The preliminary work of leveling, by Captain Roudaire, showed the depressions to be lower than the level of the sea, and demonstrated the necessity of making borings in order to ascertain whether rocks underlie the sand which composes the intervening ridges. At the meeting of the French Academy of Sciences, held December 9, 1878, M. de Lesseps gave an account of his visit to Tunis in company with Captain Roudaire and his expedition. . . .

The cheapness of labor in the desert will contribute greatly to the success of the enterprise. Bands of Arabs coming from all quarters have applied to Captain Roudaire for employment, asking but 90 centimes per day. Just how far the Tunisian sea will extend toward the center of the desert, cannot, at this stage of the enterprise, be conjectured. Whether it will be possible to effect a connection between it and the great depression of El Juf is unknown and doubtful. Should it extend as far inland as M. Roudaire contemplates making borings, namely, one hundred leagues, its southern limit will still be about one thousand five hundred miles from Timbuctoo, or twice the distance of Timbuctoo to Port St. Bartholomew.

The importance of flooding the Sahara and opening water communication with Soudan, from other than merely commercial considerations, cannot be estimated. In 1872, several authorities, among them Professor Berlioux of Lyons, estimated the annual export of slaves from Africa, including the destruction of life during transit, at upward of half a million. According to Sir Bartle Frere, the Superior of the Mission Convent of Central Africa fixes the annual (in 1872-3) drainage of human life from Africa, consequent upon slavery, at 1,000,000 lives. Lieutenant Young, writing from Lake Nyassa in 1876, describes the long lines of bleached human bones which he saw stretching toward the north-east, and states that the ground was covered with thousands of skeletons which mark he track of the slave driver. Is it not to be hoped that the opening of Africa would strike a blow, both final and fatal, to this horrible trade? Would not the introduction of a Christian civilization into this vast territory be one of the most magnificent missionary enterprises recorded in history?

Early Navigation



Old etching of a bridge across the canal from "General History".

(Concluded from Page Seven)

vent water weeping through the arches"; Warehouses are shown built into the spaces under the arches that lie outside the stream bed; and a tow path is provided for each side of the canal.

The canal under the road bridge shows a tow path on only one side. At no place in the text did the author discuss a method for a tow path crossover, or procedures for canal boats passing. The book ends with two tables: One listing twenty eight canals in England, indicating the length, width and depth. The second table lists the difference in costs between canal and road transport.

RETAIN, RECORD, RECOVER, RESTORE, RE-CREATE

(And on the seventh day, nip over and see what they're doing in the US of A)

By (the late) Pat Saunders

I've spent the last five days (in January 1992) under the care of, variously, John Lindt, Vivienne Mitchell, Lynn and Mike Howlett, and (by telephone) Dave Johnson, viewing the C&O, Patowmack and Alexandria canals: Then with Bill Trout, George Rawls and Co., in Richmond.

This, to a British canal buff who joined the Inland Waterways Association as a young (-ish) exsoldier in 1948, on returning from overseas service, was a great experience. We were all interested in the same sort of things, albeit against widely differing historical, social and geographical backgrounds.

In the UK in, say 1950, a whole canal system was still working in very much the same sort of way (with one exception), covering the same sort of routes, with the same sort of craft, using the same sort of techniques as in 1760, roughly the start of the canal revolution; a fossilized, but still working system. The one change was the introduction of the diesel engine, so that most, but not all, 30-ton narrow boats were propelled by an 18-20 hp diesel engine, instead of a horse. (Mules were rarely used, by the way.) A powered "motor" would tow an unpowered "butty," carrying between them 50-60 tons — it depended on the dredging. And this continued in the Midland Counties until the 1960's, when an un-typical cold winter, a three-month freeze-up, sent freight on to the roads, never to be recovered.

So, in some cases, it was campaigning for continued maintenance; in others fighting to retain at least the line of canal abandoned over the previous century, where recovery looked feasible; in still others, investigating and recording waterways gone (we had thought) beyond redemption.

My first physically active participation was in the early 1950's with work on the Lower River Avon; my last, to date, a few weeks ago on the Wiltshire and Berkshire Canal, near Wantage, fifty miles west of London, where over 1000 volunteers, organized by the Waterway Recovery Group, descended on one of those "no-hope" canals, and in the span of a weekend cleared 2 miles of towpath and canal bed of a ninety-year growth of weeds, shrubs, trees and rubbish.

It is the Waterway Recovery Group, a band of volunteers, of whom for many years Graham Palmer was the driving force until his untimely death, which provides much of the impetus behind the smaller, local, societies dotted over the country. Over the years, by its own efforts, linked with the IWA, it has become a source of experienced and skilled canal restorers with its own fleet of vans and minibuses, and equipment ranging from shovels through water pumps and chain saws, to dredging and earth-shifting machinery. Task forces travel hundreds of miles at the weekends and at holiday periods to "lend a hand," and work camps are organised right round the year.

Two recent successes, after year of slog, were the re-opening of the Kennet and Avon Canal, linking London with West Country Bristol; and the Basingstoke Canal, 30 miles of waterway SW of London. Her Majesty the Queen opened the former in August 1989 and the Duke of Kent the latter in May 1990. Both operations had taken two to three decades to achieve. I feel if some of us had known how long it would take — we'd never have started. Ignorance is bliss! There was one lady at the Basingstoke Canal who'd gone on her first work party lightly pregnant. Her *grandson* came to the re-opening.

My own home waterway, the River Wey, is only short, twenty miles linking Guildford and Godalming with the Thames SW of London. Then in the 1980's I saw and played on horsedrawn barges: it gave me the "bug." Horse drawn operation continued into the 'Fifties. Its last private owner, Harry Stevens, gave the Navigation to the National Trust, the principal British body caring for buildings and areas of national importance. On its 20 miles a thousand craft are registered, big and small: Recycling! Crowding!

The prime difference between our two approaches seems to me to be this: In the UK we are short of water to cruise on — so our aim is to "get it navigable and get boats moving on it", end to end. In the USA you have many miles of cruisable water so that incentive is less prominent and the accent is on the historical and archaeological aspects, with an environmental spin off. In Britain we have a Canal and Railway Historical Society which concentrates on that side. But many of us are equally happy steering a boat, dismantling an ageing diesel, delving into collections of documents or yellowing newspapers, raising money, hacking down encroaching vegetation or singing bawdy songs in canal-side pubs after a day on the "cut"; a sort of multi-faceted, three-dimensional approach. So in the US of A, so far, one element which seems vital to me is lacking — old canals working again. But who knows? In my sixties I can cruise on British canals I'd sadly regarded as lost for ever, at the age of twenty-five, even as an enthusiast.

As an Englishman I wouldn't dream of coming over here and telling you what to do. (Or would I?)

But I can dream, can't I? Dream of a manageable section of 19th Century waterway identified; with a support group raising funds, arousing public interest, pressurising the authorities, interesting boat-owners, learning old construction skills and using them; the aim to be the re-creation of a piece of American history which could be experienced by using it — and act as a revenue raising tourist attraction too. With, of course, the British Waterways Recovery Group being invited over for work camps.

Well, at 66 I doubt if I shall ever experience a 20 mile, 20 lock, 3 aqueduct day's cruise on a restored American canal. But my son might; or my grandson.

The essential quality of Brit canal restoration was this: we didn't know it was impossible, so we did it.

Keep up the good work!

(Pat Saunders was kind enough to write this article for American Canals *while on his way from England to Australia, stopping to visit family and canals on the way.)*

BLACKSTONE LOCK SAVED

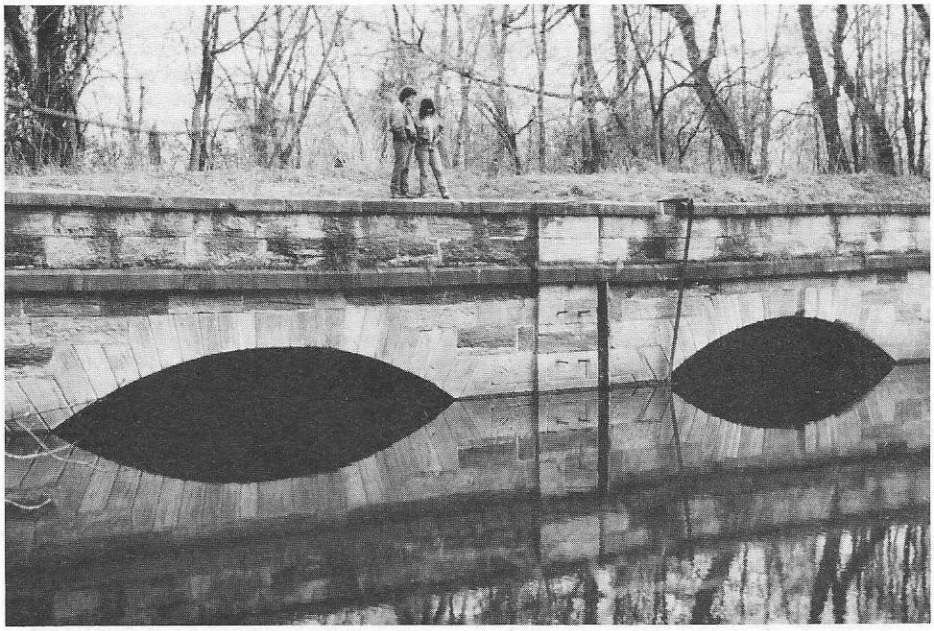
A photo taken last October 19th at Goat Hill Lock on the Blackstone Canal in the town of Northbridge, Mass. Last summer a site on the nearby Uxbridge/Douglas town line had been selected as one of three possible locations for a proposed major airport for the greater Boston area. This possible site was protested by those in the area as inappropriate especially due to its nearness to the Blackstone Valley Heritage Corridor and the Blackstone River and Canal Heritage State Park.

A canoe visit through the park was organized on October 19th and included this visit to the Goat Hill Lock by Governor Weld and other officials. The governor is in the center of the photo with light colored shoulder patches on his life jacket. From this point the party continued down the canal to Riverbend Farm where the governor announced his opposition to the proposed airport site. The site was dropped from the list a few weeks later.

Goat Hill Lock is the second best preserved lock on the Blackstone Canal and was visited on the ACS tour in May, 1989.

David G. Barber, P.E.

GENESEE VALLEY CANAL CHRONOLOGY



Black Creek Aqueduct/Culvert—This beautifully preserved large double arch structure spans a major tributary to the Genesee River about 5 miles south of Rochester. It served Genesee Valley Canal Railroad, later a branch of the Pennsylvania Railroad for nearly 100 years following its abandonment by the Canal in 1878.

Compiled by David L. Kipp

SIGNIFICANT DATES

1823: 1st petitions to improve navigation of the Genesee River received by the NYS Legislature.

1825: Bill to authorize a survey of a canal route between the Erie Canal and the Allegany River introduced in the Legislature but not passed.

Public meeting called in Geneseo to promote a Genesee valley canal.

1827: Gov. DeWitt Clinton recommended investigation of navigation from the Erie Canal to the Allegany River.

1828: A preliminary survey of the potential GVC route was made under the direction of Judge James Geddes.

1830: The Legislature appropriated $750 for a "careful" survey (not done).

Meetings of GVC supporters and promoters held in Dansville, Angelica and Geneseo.

1833: The GVC route to the Ohio River Valley was extolled in the "Annual Register and Universal Gazetteer".

1834: The Legislature authorized a detailed survey of the GVC route to include a side-cut to Dansville.

1835: Detailed survey conducted under the direction of Frederick C. Mills.

1836: Frederick C. Mills (appointed Chief Engineer) submitted a survey report. He recommended a canal on the west side of the Genesee River. It would be about 125 miles long (107 miles on the mainline from Rochester to Olean, 7 for the extension from Olean to Millgrove on the Allegany and 11 for the side-cut to Dansville). It would cost $1.9 million and require about 1060 vertical feet of lockages, 15 aqueducts, 8 dams, 134 culverts, 103 highway bridges and 130 farm bridges. A 1000 foot tunnel would be required at Portageville in the vicinity of the 3 falls in what is now Letchworth State Park.

111 petitions were received by the Legislature urging construction of the GVC.

In May, a law was passed authorizing construction of the GVC.

1837: In June, the first contracts were let (except for water supply structures) and construction was started. Anticipated completion date was 1842.

By November, 28 miles were under contract.

1838: 50 more miles put under contract.

Two tunnel plans were considered for negotiating the Portageville Moraine between Oakland and Portageville (Rt. 436 "ups and downs"). The long tunnel plan was initially preferred because it would have shortened the route by 1 3/4 miles in eliminating a loop through what is now the SE part of Letchworth State Park opposite the Middle Falls/Glen Iris Inn area. It would have involved a 1720 ft. tunnel directly through the moraine. However, test borings and test pits determined that the moraine would not support a tunnel. The short tunnel plan was adopted which was to punch a 1080 ft. passage under the 100 ft. high hill just south of Middle Falls and opposite what is now "Inspiration Point". Elisha Johnson of Rochester is awarded the tunnel section contract.

1839: In January, 1st 2 miles were completed to "Rapids Settlement" across the Genesee River from the present UofR river campus. It was decided that locks are to be 15 feet wide by 90 feet between gate quoins and made from hammer dressed stone. The prism is to be 42 ft. wide at the surface, 26 ft. wide at the bottom and 4 ft. deep. These lock and prism dimensions are the same as the original Erie Canal (Clinton's Ditch).

The "Deep Cut" through the crest of a hill between Nunda and Portageville is started. It will be 1000 yards long, up to 73 feet deep and 285 feet wide at the top. 587,000 cubic yards of dirt eventually removed.

The tunnel project at Portageville is started and 460′ of the excavation are completed. Dimensions are 27 feet high and 20 feet wide.

In June, cheaper locks (composite or wood) are authorized. This was estimated to save $385,000. Not counting the mud lock and 4 guard locks, 112 locks were required: 28 of stone, 73 composite (rough stone with plank lining of the chamber) and 11 wood.

Final contracts were let.

1840: Erie Canal junction (Rochester) to Mr. Morris opened. Sept. 1st, first boat arrived. Daily packet boat service started.

Hornby Lodge constructed by Chief Engineer Elisha Johnson over the tunnel site at Portageville to be his home during the project. 760′ of the tunnel now complete.

Scottsville Feeder Gates—Allen's Creek (Now Oatka Creek) waters were impounded by an arched dam just to the right and sent down the Scottsville Feeder through these gates. This was one of four sites where the Genesee River was tapped for water for the canal. Iron gatepost collars are still in place.

Portageville Aqueduct Site—Having completed its diversion to the east side of the Genesee River to bypass the Letchworth Gorge, the GVC crosses over to the west side again over a 7 span, wooden trunk aqueduct 50 ft. above the river. The abutment on the far side is preserved unchanged from the canal era. The piers in the foreground are remnants of the RR trestle that replaced the aqueduct.

Collectors office established in Scottsville. $6900 collected the first year.

Property value of the canal right-of-way listed at $400,000.

1841: Canal open to Dansville—now a total of 51 miles open.

1842: Tunnel ready for masonry arching.

1842 to 1847: All canal construction work in New York State stopped—credit crisis. Unfinished at this time: Shakers (Sonyea) to Olean—65.5 miles. 95 locks remained to be completed—71 foundations for these had been laid.

1847: Works resumed (slowly). Part of tunnel ceiling found to have collapsed. Bids were solicited for resolving tunnel area dilema: Complete tunnel with masonry arching—$104,000. Open cut around the edge of the hill on the edge of the gorge—$32,000.

1848: Portageville tunnel abandoned for an open cut after spending $250,000 on it. The abandoned tunnel became the home of a large bat colony and a destination for intrepid explorers until the Park recently sealed off the entrance for safety reasons.

1849: Work continues slowly along the canal line due to inadequate funding, strikes and the beginning of a competitive thrust from the Erie Railroad entering western New York.

1851: Canal opened from Mr. Morris to Oramel, just south of Houghton Creek, site of "Jockey Street".

Erie Railroad completed to Olean.

Small Culvert—A well preserved 4 ft. arch culvert a few miles south of Mt. Morris, NY. The Canal Prism is readily visible here for several miles paralleling NY Route 36.

1853: Canal opened to Belfast.

1854: Canal opened to Rockville.

Canal right-of-way value listed at $5.4 million.

Tonnage carried by the canal peaked this year: 159,000 tons. Boat departures and arrivals at Rochester totaled 5350.

1856: First boat arrives in Cuba.

Canal completed to Olean.

1857: The Legislature authorizes the extension from Olean to Mill Grove.

1858: Oil Creek Reservoir (now Cuba Lake) completed. Provided water to the summit level. Dam is 2000 feet long, 60 feet high, 290 feet wide at the base; the largest in the world at the time. It created a lake of 500 acres, 1665 feet above sea level.

1859: 6 of the 6.7 mile extension from Olean to Millgrove Pond on the Allegany River and all but the last two locks are completed.

1861: Extension to the Allegany River at Millgrove completed. Total construction costs about $6 million, 3 times original estimates.

1862: First navigation season with completed Canal.

Summit level closed for 60 days this year and in 1863 due to lack of water.

1868: Oil Creek Reservoir dam raised 6 feet. Ischua Creek dam raised 2.5 feet.

1869: Oil Creek Reservoir dam raised 2 more feet and Ischua Creek another 6.5 feet. This allowed 27 boats per day to pass over the summit for the entire navigation season.

Note: After the GVC was closed, the Oil Creek Reservoir Dam was lowered to its original height due to public nervousness in regard to man-made dams following the Johnstown Flood disaster in 1889.

1874: Opening of navigation delayed until June because of winter ice and spring flood damage, primarily in the Keshequa Creek valley.

NYS authorized to sell or lease canals not financially viable.

1875: Canal Commissioners determined which lateral canals should be leased, abandoned or retained as feeders.

Aggregate cost of GVC construction and improvements to date is $6.7 million.

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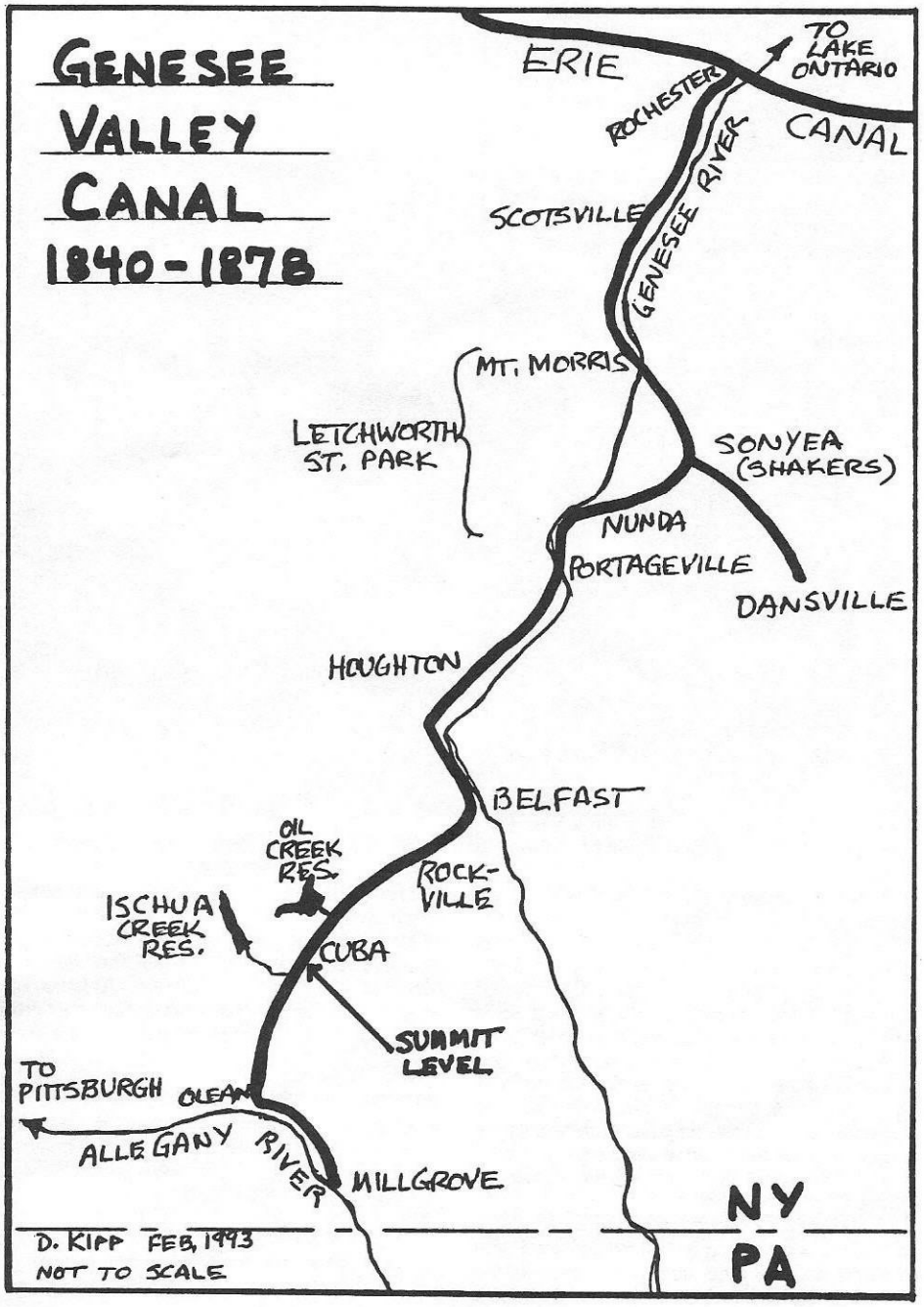


CANAL CALENDAR

June 12, 19, 26, July 3, 10, 1993 — Friends of the Delaware Canal. Canal walk on the Delaware Canal. (215) 862-2021.

June 19-20, 1993 — Old Market Day on the bank of the Lehigh Canal at the Lockhouse in Freemansburg. 9 AM to 5 PM (215) 868-3103.

June 27, 1993 — Annual Canal Days festivities at the locktender's house at Lock 60 and St. Michael's Park area in Mont Clare. Contact Judith Sheldon, (215) 935-0624.

July 10, 1993 — Annual Lehigh Canal Festival at Hugh Moore Park, Easton, PA. (215) 250-6700.

July 10-11, 1993 — Cumberland Canal Boat Festival, Cumberland, MD. Contact: Rita Bauman, (703) 503-9323.

July 17, 1993 — Old Freemansburg Association. Tour of the Chesapeake and Delaware Canal. (215) 691-0956.

August 7, 1993 — Midsummer Night's Dream. 7:30 PM, in Delphos, OH. Dinner on board the Marguerite II. $25/Individual; $40/Couple; $15/Child under 16. Complete multi-course dinner and entertainment. Limited to 40 persons. Contact: (419) 695-7737 to reserve space. Delphos Canal Commission.

August 21-22, 1993 — Williamsport Canal Days, Williamsport, MD. Contact: Rita Bauman, (703) 503-9323.

September 11-12, 1993 — Pawpaw Bends Canoe Trip. C and O Canal. Contact: Carl Linden, (301) 229-2398.

September 16, 1993 — Fall Lecture Series, 8 PM. Canal Museum at Easton, PA. "Crystal Valley and other films of the Lehigh Valley 1940-1970".

September 18, 1993 — Appomattox River Batteau Festival at Appomattox River Park (Across the river from Matoca, VA). Free rides. (804) 733-2402.

WEED TREES IN LOCK WALLS

This news item, which appeared in the "Manayunk Quip" *(Philadelphia) for the Fall of 1992 should be of interest to all canal preservationists. The treatment of growing trees is a problem everywhere - Bill Trout.*

As various consultants and engineers have inspected the canal infrastructure, lock walls in particular, concern has been expressed time and time again about the damage being inflicted on the old walls by the weed trees growing out of them. While the report for the canal is still in the works, Fairmount Park Staff has moved ahead to address the issue.

Supervisor Steve Dutil and Mike O'Brien, at the suggestion of the consultants, researched the idea of girdling the trees, a process which kills the trees and stops the roots from continuing. Starting last week with the locks at Lock Street, O'Brien started girdling the trees growing out of the stone walls. The same process will happen at the upper locks.

A study of the canal is nearing completion and will describe the various projects, such as the locks and the various bridges, needed along with the projected costs of the projects. New Manayunk Corporation will then start working with Fairmount Park Commission staff to raise the necessary funds.

The Manayunk section of the Schuylkill Canal is the oldest remaining anthracite canal in Pennsylvania and the most complete section of the Schuylkill Canal in existence today. It provides a unique chance for Manayunk, since the recreational and economic benefits.

Recreationally it provides a unique chance for the community of Manayunk to enjoy the canal and river. Preliminary findings are that the locks are in good enough condition to return to a functional level. The canal is still our unrealized promise of the future and hopefully in the near future we can see it functioning again.

(Submitted by Sybil Bazuin)

BOOK REVIEW

Through a blend of evocative prose and museum-quality photographs, Author Jim Redd entices us to join him on a personal journey down the Illinois and Michigan Canal.

In *The Illinois and Michigan Canal: A Contemporary Perspective in Essays and Photographs* (136 pages, $29.95, May 12), Redd shares the experience of discovering the canal's archaeological record, of learning its history, and of meeting the people who live along its corridor. He celebrates the canal's aqueducts, locks, and masonry as representative of an earlier, more humane form of technology and engineering.

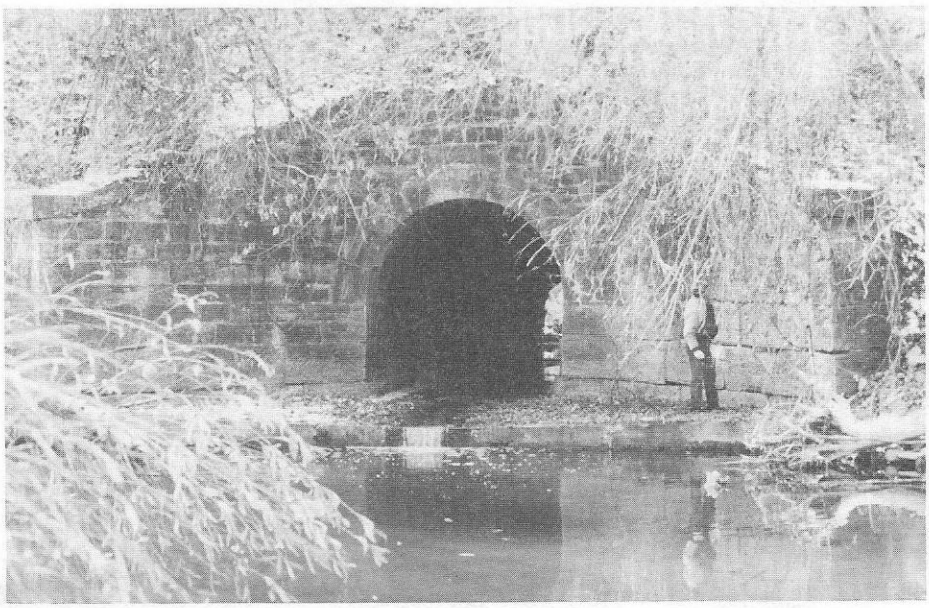
The Illinois and Michigan Canal runs from Des Plaines to La Salle. Completed in 1848 and closed to navigation in 1933, it symbolizes the final flourish of preindustrial technology. Redd finds the canal fascinating "partly because of its historical significance but also because of the inherent visual richness I have found in its old masonry structures and the towns it links across a hundred miles of Illinois landscape."

Yet reality tempers this nostalgic view. Redd's camera finds the "rusting ruins of twentieth-century industry." And he writes of the "stench of stagnant water and industrial waste." To Redd, however, the "authenticity of this unmoderated harshness was engaging in its own way, and I have made no effort to disguise this present reality in the photographs."

Redd balances the objective documentation of the photographs against his subjective account, which germinates in history and blossoms into an intimate sense of what the canal has been and is now. He sees beauty where most of us would see only ruins; and, in this saga of the land as a record of everything that has happened throughout time, he shows us what we missed. In the present, an old ruin of a canal, he sees the beginning, the time before the glacier inched southward.

Obsolete now, this is the canal that catapulted Chicago from village to major metropolis.

GENESEE VALLEY CANAL



York Landing Culvert—Another 8 foot culvert just east of York, NY.

(Concluded from Page Eleven)

1876: Tolls collected were $14,700 vs. repair and operating costs of $23,000.

1877: NYS Legislature authorizes abandonment of the GVC.

1878: Last navigation season. Accumulated operating costs = $2.82 million. Revenues = $860,000. Net Loss = $1.96 million. This can be compared to the Erie Canal's cumulative net profit in 1888 when tolls were eliminated of $92 million.

1880: Canal right-of-way sold (with the exception of the Dansville side-cut sold to local farmers and two stretches near Rochester and Cuba Lake retained as Erie Canal feeders) to the Genesee Valley Railway Company for $11,400, less than $100/mile.

1883: The Genesee Valley Canal Railroad opened through from Rochester to Olean. Later became part of the Pennsylvania RR system.

1963/1971: Railroad abandoned to Wadsworth Junction/Rochester.

LENGTH:	Miles	LOCKS:	No. of Locks
Roch. to Olean	107	Erie Canal Mud Lock	(1)
Dansville Side-cut	11	Genesee River Guard Lock At Mt. Morris	(1)
Extension--Olean to Millgrove	7	Roch. to Olean	104*
		Dansville Side-cut	8
Total	125	Oswayo Creek Guard Lock	(1)
		Allegany River Guard Lock	(1)
		Total	112 + (4)

*Locks #105 & 106 at Olean started but never completed.

	Feet Above Sea Level		Vertical Feet
Erie Canal at Rochester	510		
		97 Locks	979
(Dansville Side-cut)		(8 Locks)	(83)
Summit Level (Black Creek, Oil Creek Reservoir, Ischua Feeder)	1489*		
		7 Locks	76
Allegany River at Millgrove	1413		
		Total Lockage	1055

*Highest of any U.S. canal.

SUMMIT 11.5 miles long between Locks 97 and 98.