The "Main Line" Lives Again!

CORINTH CANAL

Any ACS members who are planning to visit Greece in the near future might consider a visit to the Corinth Canal near Athens. This waterway is well worth the hour and a half bus ride. A deep gash through the limestone of the Peloponnese, the Corinth Canal links the Saronic and Corinthian Gulfs. The Corinth Canal was started in 1882 by a French company and completed in 1893. The Roman Emperor Nero attempted to build a canal with slave labor in the same spot in 72 A.D. but was killed by the solid rock of the Corinthian Isthmus. The walk along the length of the Canal passes through four miles of beautiful Greek countryside. Some points along the well-marked canal-side trail reach 200 feet or more above the water level.

Photo taken from highway bridge looking toward railroad bridge - 1674. (By Bill Shank)

ACS members should disembark from the Athens bus at the Terminal located just north of the only highway bridge across the canal. Those who continue into the town of Corinth will find themselves many miles from the canal. Walk across the bridge and turn right. The walk begins here. Two notes: Don't look down as you cross the bridge; it's a long drop. Also, be sure to walk only on the south side of the canal. The north side is occupied by a cleverly camouflaged Greek Army Base. They might not accept your explanation that the USA is just a fellow NATO member, after all. (J. Wayne Halsey, ACS)

The "Juniatia" Canal Boat, undergoing Spring repairs, alongside the restored old Main Line Canal at Lewistown.

David M. Knox, a partner in the contracting firm of John C. Knox and Sons, Lewistown, Pa., is once again preparing his canal boat "The Juniatia" for a full season of operation on a half-mile stretch of the old Main Line Canal which he and his brother Jack have dredged out. He reports that during the dredging operation he found the old clay lining at the bottom of the canal still "hard as concrete." This has made it a simple matter to retain all the water he needs in the canal, with a small stream at the eastern end of the project at the only water source.

The restored canal section is located on a property called "The Locust," a 275-acre plot of ground west of Lewistown, owned by the Knox family. Knox has plans for a recreational development in the area, which would include a convention center, a nine-hole golf course, pro-shop, gift shop and various arts and crafts operations. He already has a real-estate development underway in the immediate vicinity of the canal.

A year ago, he felt he had about exhausted his personal resources and offered the entire property to the Mifflin County Commissioners as a gift, retaining only the right to continue various development operations, through his contracting firm. They turned him down! Undiscouraged, Dave Knox is now considering forming a power company to complete the project, with the present possibility of getting State and Federal help.

In any event, "The Juniatia" canal boat will once again be available to tourists and special groups this summer, who want to experience the quiet pleasure of riding "back of nukes" on the restored Main Line Canal. For information write: John C. Knox and Sons, P.O. Box 388, Lewistown, Pa. 17044.

Dave Knox stands at the boarding dock for his half-mile re-watered section of the Juniatia Division of the Pennsylvania Main Line Canal. Note one of the original "P.C." (Pennsylvania Canal) markers in the foreground.

AMERICAN CANALS. NO. 21 — May, 1977
Boston Lock "Bows" to C. E. Project

This is the lock at the Charles River Dam in Boston. It was completed in 1900-10, is 350' long, 45' wide and 18' deep at low water. A new project about a mile to the east now under construction by the Corps of Engineers will replace this lock. The new complex will have three locks, side-by-side; one for commercial use and two for recreation. The commercial lock will be 300' long, 40' wide; the recreation lock will be 200' long and 22' wide. Expected completion date is sometime in 1977. (Alden Goud, Director, ACS)

HATS OFF TO DR. ZIP

During a recent visit with fellow ACS member Dr. Zio Zimmerman, I was talking about my forthcoming book - Champlain to Chesapeake. Zip said he recommended a doctoral dissertation on the Champlain Canal when he was working on his own dissertation at Columbia University. He even recalled the name of the author - John O'Henry, and the year - 1961. I quickly cal to the Columbia Library produced the title: Eric's Junior Partner: The Economic and Social Effects of the Champlain Canal upon the Champlain Valley. It is published on demand by University Microfilms International, P.O. Box 1346, Ann Arbor, MI 48106. He told me publication #2548 and costs $21.00.

The dissertation is a real classic canal history which I feel every canal enthusiast will find thoroughly enjoyable, even though it lacks illustrations. It belongs in the library of every serious researcher of the American Canal Era. The eleven chapters are loaded with detailed facts and figures. There are a total of 500 pages, including a companion 22 page bibliography, between soft covers. (Bill McKeen, Director, ACS)

Appomattox River

"On behalf of the American Canal Society, I urge you to do what you can to designate the Appomattox a scenic river. The river above Petersburg is a beautiful river section, which we have visited by canoe and foot, and explored as an historic canal enthusiast. In addition to the portion of the Upper Appomattox Canal at Nottoway, it is clear, there are many mile races and other signs from a century ago which make the area particularly fascinating - a combination of natural and cultural resources which needs protection now before it is ruined and lost to its descendants. I suspect that the remaining scenic rivers, which are just beginning to receive the attention they deserve, will be much more valuable to future generations than we can imagine. Please save it now while it's in good condition!"

CAPTAIN'S CORNER

By the time this issue of American Canals reaches you, it will be back on the British inland waterways using ACS member Tom Sawell's Narrow Boat PHOBOS, this time on the Rivers Lea and Stort and the Grand Union Canal.

It may seem odd to some that we would spend our holidays on British waters rather than home at our home, but the truth of the matter is that we have the cold climate on our canals and rivers. Where else but Britain can one take an old working canal boat (or a modern one) under nearly historic operating conditions? When you go back onto a balance beam, or your arm and shoulder muscles into a cranky winch gate or set the water pouring down a ventilation shaft in a tunnel or pouring down in the rain while steering a canal boat, then you begin to get some of the feeling of how it was in the old canal operating days.

Whether the British like it or not, their inland waterways could be their greatest tourist attraction. For those who are interested (how could you not be), there are three firms now actively involved in attracting North Americans to waterways vacations in the United Kingdom. These are: Star Line, East Water Street, Shrewley Green; Shrewley Green equipped with a couple to help work the boat - the PHOBOS is an ex-working boat (10% discount to ACS members); Bargain Chartering, 127 High Street, Morganstown, WV 26505; and Pausan Travel Bureau.

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150-YEAR O. & E. CANAL CELEBRATION

From ACS Member James Kuth in Cleveland, and also from Jim Tabaczynski of the same city, we have learned of the recent forming of the Ohio Canal Sesquicentennial Commission. Primary purpose of this organization is the observance of the 150th Anniversary of the opening of the Ohio and Erie Canal between Cleveland and Akron on July 4th, 1827. The well-watered O. & E. Canal, in the section south of Cleveland, is now part of the new Garfield Valley National Park recently approved by Congress and administered by the National Park Service.

The Commission plans a series of public events this summer. Included are plans for a "Canal Days Drumlin" photo and essay contest, audio-visual displays, town, band concerts, historical marker dedications, and restorations.

American Canals, No. 21 - May, 1977
THE HENNEPIN CANAL (Part Three)

by Mary M. Yeeter

(This article is the third of a series on the Hennepin Canal, formerly the Illinois-Mississippi Canal. Part three is the beginning of "The Seventeen Year Construction Project: Mary M. Yeeter is an historian working for the Hennepin Canal Parkway.

The Hennepin Canal construction project began on September 19, 1890 when Congress passed the River and Harbor Act authorizing construction under the authority of the Secretary of War and appropriating an initial $500,000 for specific portions of work. The canal, however, was not officially opened for navigation until November 15, 1907. A number of engineering and administrative decisions account for this rather lengthy construction period.

The most significant decision, and surely the best concerning the project, was made in 1891: to substitute artificial stone faced with Portland cement – concrete – for traditional cut stone facings in the canal's locks and dams. Some European nations had experimented with concrete prior to 1891, but the Hennepin Canal marks the beginning in America of the use of concrete in canal construction.

Looking north from Aqueduct 9 (over the Green River) on the Feeder Canal. Showing the north emergency gates (Desfontaines type) closed under a head of about five feet of water while the aqueduct chamber remains dry. July 13, 1909. (Photo courtesy of the Rock Island District Corps of Engineers.)

One of ordinary nitrite type upper gates at Lock 24 on the mainline of the Hennepin Canal. September 26, 1906. (Photo courtesy of the Rock Island District, Corps of Engineers.)

One of ordinary nitrite type upper gates at Lock 24 on the mainline of the Hennepin Canal. September 26, 1906. (Photo courtesy of the Rock Island District, Corps of Engineers.)

During the detailed planning stage for the first section of the canal, Major W. L. Marshall, who was in charge of the Second Chicago District of the U.S. Army Corps of Engineers and thus commanding officer for the entire Hennepin Canal project, asked the Secretary of War, Charles Foster, for permission to use concrete. Marshall argued that it would be stronger and more durable than traditional cut stone masonry and that it was less than half the price of the more conventional material. Furthermore, recognizing though not successfully remedying what was to be the canal's fatal flaw, Marshall suggested that the savings resulting from the use of concrete be used to increase the width of the locks by five feet. On May 11, 1891, the Secretary of War granted permission to use concrete in construction of canals and locks and accepted the suggestion on expanded lock width.

Because of the uniqueness of their situation as officials in charge of the first American canal constructed with concrete, Marshall and Assistant Engineer L. L. Wheeler, a civilian engineer, who had direct responsibility for the first section of actual construction work, had to develop methods for working with the material. They used a combination of standardized techniques and new procedures especially developed for the project. The concrete for the arch culverts was mixed in the traditional way by hand, but that for the lock walls was mixed by machines.

Although not in accordance with tradition, the decision to substitute concrete for cut stone was an important and wise action. The pioneering work done on the Hennepin Canal "revolutionized the construction industry and set a pattern for canal construction, especially at the Panama Canal."

Not all the decisions made in the Hennepin Canal construction project were equally wise either from an engineering-technological or financial point of view. When the project was begun in 1891, the estimated cost was $3,925,900; by June 30, 1898, the total cost of the canal and related structures was $7,319,563.09. Despite the very real and substantial savings that resulted from the use of concrete, the canal cost nearly $400,000 more than anticipated.

The work began at once, but did not continue uninterrupted. In November 1891, Marshal and two Assistant Engineers, C. L. Wheeler and James C. Long, began work on the final location of the canal. This was not an easy task even though the area had been surveyed and resurveyed with a proposed canal in mind since the 1830's. Not only had the Chicago, Rock Island and Pacific Railroad been constructed along the same route that the canal would naturally flow and taken the most suitable terrain, but the survey also had to avoid valuable property and buildings where an equally good site might have been obtained. Eventually, Marshall and the two engineers located the mainline. It leaves the Illinois River about two miles above the town of Hennepin at a point known as the Great Bend where the river turns from a westerly course to run almost due south, then parallels the tracks of the Chicago, Rock Island and Pacific Railroad until it enters the Rock River near the mouth of the Green River. It follows the Rock to Milan after which it goes through Big Island and enters the Mississippi about three miles below Rock Island.

Once the main line had been located, the first of a series of questionable administrative decisions was made: the location of the lock capacities was postponed. This decision probably came about because in the winter of 1880-1881, the adjacent cities of Sterling and Rock Falls put in a joint claim for the terminus of the feeder line even though Dixon, another city on the Rock River, had been chosen as the head of the feeder by earlier government surveys.

Even though the problem of the location had not been settled with right of way acquisition began in 1891, Assistant Engineer Wheeler had the primary responsibility for the actual work of securing the right-of-way, describing the tracts, negotiating with land owners, preparing condemnation cases, perfecting titles and generally protecting the federal authorities against unreasonable claims. A second questionable administrative decision was made in relation to this work, one probably more significant than that involved with locating the canal. Although funds had been appropriated by the Congress of the United States and the Illinois legislature had ceded to the federal government jurisdiction over lands acquired (Concluded on Page Seven)

Building bank across slough on ice showing a narrow gauge train with six cars dumped. January 23, 1903. (Photo courtesy of the Rock Island District, Corps of Engineers.)

Page Three
Winter, 1977, photo of Lock #47 of the Union Canal along the north side of Tulpehocken Creek, a few miles west of Reading, Pa. This lock is being completely re-built, with gates and all, by the Berks County Parks and Recreation Board as part of a canal restoration and re-watering project, now in full swing.

by Robert A. Pawling

It's hard to believe that the Union Canal was once hailed as the "Golden Key" to the West; yet, in the early nineteenth century, it was hoped that this six million dollar project would provide Philadelphia with a highly advantageous trade route to the agricultural interior of America. When completed in 1827, the canal extended a distance of 79½ miles from Peadling on the Schuylkill to Middletown on the Susquehanna.

Attention is once again being focused upon this long-forgotten waterway because of Berks County's conducted efforts to restore a portion of it to operation. Near Peadling the canal followed the Tulpehocken Creek and passed through what is now Grings Mill Park and Recreation Area. Here, to the delight of canal buffs and Sunday strollers alike, a two-mile stretch of the towpath from Rehr's Mill to Stonetown has been preserved. In addition, the park contains Lock 47 around which the county's restoration interests are being centered. State and local funds have been directed toward reconstruction of the lock, with work having begun last spring. Construction of the lock gates is progressing toward completion in 1977; however, other canal improvements are necessary before a one-mile stretch of canal can be reopened. To complement the lock restoration, a canal museum is planned that will house the C. Howard Hester collection of Schuylkill and Union Canal artifacts. Mr. Hester, who is the last remaining Schuylkill Canal captain, recently donated his life-long accumulation of canal memorabilia to the county. Cataloguing of the collection, which consists of everything from boats pictures to signs, is being undertaken by the park's historian-naturalist Richard Pawling. According to the county's long-range plan, the museum will be placed near the restored covered bridge and the relocated Gruber Wagon Works.

Five characteristics bring distinction to the Union Canal: 1) It was the first canal ever surveyed in the United States; 2) It was visited several times by our country's first president; 3) It sponsored the largest canal lottery in our nation's history; 4) It required an elaborate water supply system to keep its summit level from going dry; and 5) It boasted the second oldest transportation tunnel ever constructed in America.

The famous Union Canal Tunnel, west of Lebanon, Pa., as it appeared during a tour of the Union Canal by the Pennsylvania Canal Society, several years ago. (Photo by Bill Shank)

Following a post-war depression interest in internal improvements renewed. In 1791, two separate companies were chartered to effect a connection between Philadelphia and the Susquehanna Valley. The Schuylkill and Susquehanna Canal Company was to dig a canal through the summit level near Lebanon in order to connect the Schuylkill and Susquehanna by means of their tributaries the Tulpehocken and Quitapannah. Meanwhile, the Delaware and Schuylkill Canal Company was responsible for building a small canal above Philadelphia which would more effectively utilize these two rivers for purposes of navigation.

Work on the project began in 1792 under the supervision of William Weston, a highly-acclaimed English engineer. It was during this period of construction that George Washington, accompanied by Secretary of the Treasury Hamilton, visited the canal near Myerstown. The President was delighted to note that four brick locks descending the east end of the summit level "appeared admirably constructed." Unfortunately, neither Weston's expertise nor Washington's optimism could stave off the financial collapse of both canal companies.

To inject new life into the financially reeling project, the Pennsylvania legislature in 1811 combined the interests of both bankrupt firms into a new Union Canal Company. Appealing to pursue the project as a grand task had grown especially urgent since rival Baltimore was threatening to snatch central Pennsylvania's commodity produce from the anemic grasp of Philadelphia's merchants.

In those days, lotteries were a common method of fund raising, and as a quick way to raise funds it seemed perfectly suited for the Union Canal. Indeed, efforts to finance the canal became so intense that the lottery became known as the greatest canal sponsoring scheme in our nation's history. As early as 1795, the canal had harnessed permission to raise $400,000 by lottery, yet only $59,000 had been brought in by 1811. The new commissioners were authorized to raise the remaining $341,000. This time, lottery agents marketed their tickets on a national scale exhibiting a competitive zeal that would rival present-day advertising campaigns. In low-income areas, 35 million dollars' prize money was awarded. Incredibly, only $270,000 in proceeds ever reached the canal.

Despite financial difficulties, work on the canal continued on schedule. The Reading section from Robert's Mill to outlet lock 54 was one of the last to be finished. By 1832, most of the contracts for particular jobs were ready to be let out to individual contractors. A typical offer proposed by a Perkiomenville canal called for the construction of Lock 47, 48, 49, and 50 with the following prices quoted: "For the face work including the building thereof $8.50 per 25 cubic feet, the rough work $4.50 per 100 square feet, the carpentry work $15.00 for each lock, and the covering $7.50 per cubic foot."

The lock dimensions were small, 8½ x 75 feet with an average lift of 5 to 8 feet. Some lock construction was accomplished with the use of hydraulic cement, however, the most common material used in the facing was red sandstone. Four examples of this stone, originating in the quarries of Cornwall Furnace, can still be seen at Lock 47 and at the Gring's Mill powerhouse.

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This is the first half of an article by AGS member Robert A. Pawling, R.D. #3, Kutztown, Pa. 19530. It will be concluded in the next issue.)

AMERICAN CANALS, NO. 21 — May, 1977
THE TENNESSEE CANAL

by L. W. Richardson

The title is misleading. The Tennessee Canal was the second record in Alabama and the name derived from the river rather than the state. It was more familiarly known as the First Muscle Shoals Canal.

As the early canal projects in this part of the mid-south or in their region for being to the navigational problems on the Tennessee River, it may be in order briefly review the obstacles that confronted the pioneer boatmen.

From the head of the river near Nashville, for 161 miles downstream to just below Chattooga, reports of the Army Engineers described the river as having "numerous shoals and a shallow channel." Nevertheless, this stretch was navigable for all types of river craft with experienced pilots and a decent level of water.

Just below Chattooga, conditions changed. Here the river cuts through the rocky outcrops below the dam which has a water level of 378 feet for twenty miles, falling some twenty feet in the distance. The names given by the boatmen to the series of obstructions they encountered here gradually grew into the present. First there was the Tunstall Shoal; then the Suck, where the big river was constricted to a width of 150 feet or less. Here the current carried the boatmen and sometimes held boats for hours and last, the Frying Pan. Collection of smaller eddies and shoals. The whole was called the "Narrows," the "Narrow" to the navigation.

While this section was dangerous, and for those craft bound upstream, absolutely impassable; no bypass canal was ever proposed. The mountains were too close to the river to make it practical. Until a public works project and eventually built at Hales Bar in 1913, the only improvement to navigation was a horse operated winch on shore above the Suck. With the help of one of these horse-drawn boats, the men could be able to make it through the worst passage.

For nearly 140 miles below the Narrows, the boatmen had relatively easy traveling, with only minor shoals and bars. This changed abruptly at Enterprise Island. Here began the series of rapids known collectively as the Muscle Shoals. At the foot of the island was Elk River Shoals; six miles below began the Big Muscle Shoals, still further along was Little Muscle Shoals, the mouth of the town of Florence; nine miles beyond was Bear Tree and twenty miles further was Colbert Shoals. Between Brown's Bend and the foot of Colbert Shoals, the river is 170 feet, 134 feet in the Elk River – Little Muscle Shoals area alone. At one point in Big Muscle Shoals the descent was 15 feet to the mile.

The situation was intolerable, not only to the settlers in the valley but to merchants and boatmen along the vast inland river system, from Pittsburgh to New Orleans. It was admittedly a railroad problem. Although direct federal aid in the financing of internal improvements was then thought to be unconstitutional, help could be had – indirectly.

On March 2, 1837, Congress appropriated the tremendous sum of $200,000 toward the expenses of a survey of the shoals and shortly thereafter, teams of Army Engineers were at work along the river. Technically, these crews were "labeled to the Shoals Survey. In fact, it appears that the cost was absorbed by the War Department. Alabama had enjoyed the status of statehood for only a short time. It was not until the middle of the 19th century that the population of Muscle Shoals numbered over 100,000 inhabitants. (Of those, probably very few actually received any assistance from the survey.)

While the survey was being conducted, the U.S. Congress passed a law providing for the establishment of a federal canal, with a 100-foot wide channel, and a depth of 12 feet. The survey recommended a canal at Muscle Shoals, but Congress did not act on the recommendation for another five years.

The Tennessee Canal was a major engineering project, and its construction required a large workforce. The canal was completed in 1845, and it served as a significant transportation route for the region. However, the canal was largely unused due to the gradual shifting of the river channel and the construction of locks and dams further downstream. The canal was eventually abandoned, and the remains are now a historical landmark. The completion of the Tennessee Canal was a significant milestone in the development of the southern United States and played a crucial role in the region's economic growth.
THE FIRST SUSQUEHANNA CANAL

by Robert S. Mayo, P.E.
& William H. Shank, P.E.

In the years following the Revolutionary War intense rivalry developed between the ports of Baltimore and Philadelphia for the trade of the southern portion of the state, drained by the Susquehanna River. Since the Susquehanna River emptied into Chesapeake Bay just east of Baltimore, first commercial entrepreneurs of that city in the late 1700's considered the Susquehanna "their river", including the traffic in oaks, flat boats and lumber rafts, which at that time went to Ohio, over the overland trips into Baltimore from central Pennsylvania, and from as far north as upper New York State.

The Susquehanna was selected and work began. The canal was 30 feet wide, three foot deep and nine miles long, running from the upper end of Port Deposit, at Smith's Falls, to Love Island. There were nine locks, 12 feet wide by 20 foot long, to overcome a sixty-foot rise in the river. The upper reaches of the canal were drowned out by Conowingo Dam (built in 1926) and the lower section, approaching Port Deposit, was destroyed when U.S. Route 222 was built. However, traces of this old canal, one of the first built in the United States, can still be seen, both sides of the mouth of Octoraro Creek.

Around the turn of the nineteenth century plans for a possible canal connecting Chesapeake Bay with the Delaware River enabled Philadelphia to perceive the advantages of an all-water route to connect them with the lower Susquehanna and Maryland. Relations thus improved between Pennsylvania and Maryland to the point that Pennsylvania Governor Thomas McKean in 1801 commissioned Benjamin Latrobe, a prominent architect of the day, to make a survey of the Susquehanna River from Columbia to the Maryland line and to prepare plans for improving navigation for for navigation for oaks, rafts, and keelboats.

By 1802, the work on the "Susquehanna Canal", delayed by financial difficulties and previous political disagreements, had progressed to the point that sufficient water could be let through the locks and the canal managers reported, "we were able to demonstrate to the satisfaction of all persons present that the Canal will afford a safe, easy and expeditious navigation of more than nine miles up and down the most difficult and dangerous part of the River." The next year the managers announced that the route was officially finished.

In the meantime, Baltimoreans were just as determined to capture as much of the Susquehanna River traffic as possible. In 1782, upon urging petition, the General Assembly of Maryland passed an act granting a charter to build a canal from a point known as Love Island in the Susquehanna River, just south of the Mason-Dixon line, to Tidewater at Chesapeake Bay. The organization, of some forty-five men, which were to include John Carroll, one of the signers of the Declaration of Independence, as well as Augustine Washington, half-brother of George, agreed to raise twenty-thousand pounds and complete construction of the canal by 1801. The company was incorporated as "The Proprietors of the Susquehanna Canal." The undertaking was one of the first of its kind in the United States.

The east bank of the Susquehanna was selected and work began. The canal was 30 feet wide, three foot deep and nine miles long, running from the upper end of Port Deposit, at John Smith's Falls, to Love Island. There were nine locks, 12 feet wide by 20 foot long, to overcome a sixty-foot rise in the river. The upper reaches of the canal were drowned out by Conowingo Dam (built in 1926) and the lower section, approaching Port Deposit, was destroyed when U.S. Route 222 was built. However, traces of this old canal, one of the first built in the United States, can still be seen, both sides of the mouth of Octoraro Creek.

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In the meantime, Benjamin Latrobe continued to supervise improvements to the Susquehanna Canal on the Pennsylvania side of the State line. These improvements for navigation, almost entirely down-river, included blasting of underwater rocks, diversion dams and marking of the channel. The large-scale map he prepared

Columbia to Port Deposit showed all the rocks, shoals, falls and riffles as well as the "Susquehanna Canal" from Love Island to Tidewater. It is of interest that this map was destroyed by the British in 1814 when they burned the City of Washington. In 1817 Latrobe rode over this map from his own notes and sketches.

Benjamin Henry Latrobe was born in 1764 and educated as an architect in England. There he met and married Anne Amasa, the daughter of Col. Henry Artemus, who was prominent in the Masonic Church and the Revolutionary War. After Ann's death he came to the U.S. in 1796. Latrobe not only worked to improve the navigation of the Susquehanna River and on his sudden death, Latrobe was called in to complete the work.

Latrobe is best known for his architectural work. He was an advisor on the Washington City Canal Canal, 1802-1810. He designed and supervised the construction of the National Capitol building, the Baltimore Cathedral and the Philadelphia Water Works, the nation's first water supply system using steam pumps. He also surveyed the routes for the Chesapeake and Delaware Canal, 1804. He died in New Orleans in 1820 of Yellow Fever. His son, B. H. Latrobe, II (1806-1847) was equally famous. He was Chief Engineer of the S & O R R during construction of the Ohio River.

In spite of state aid, assessments on the stockholders, and tax exemptions, the operation of the "Susquehanna Canal", later called the "Port Deposit Canal" or "Conowingo Canal", was not profitable. Experiences of construction was faulty and revenues could not be collected. The canal had been constructed, in part, for the benefit of mills powered by water along the route. Hence, there was a strong current in the channel, which washed the banks, carried in river silt, and generally made navigation difficult. Many of the down-stream wheels and mills simply avoided the canal entirely. In 1804 the Maryland legislature granted the canal managers the right to operate lotteries to supplement their income, but apparently even this did

(Concluded on Page Seven)
Hennepin Canal (Concluded from Page Three)

Through eminent domain for right-of-way, the Corps of Engineers did not move immediately to secure the right-of-way for the entire route in one complete continuous operation. From 1851 to 1906, the right-of-way was obtained only as it was needed for construction.

By 1862, the estimated cost increased for right-of-way and damages to $285,000; the eventual cost of obtaining the right-of-way was $445,000. This place-right acquisition policy delayed construction because the government was faced with many law suits which delayed the acquisition of land and the removal of obstructions. As late as 1893, Major Marshall himself admitted that if right-of-way acquisition were completed for the entire route, the canal could be opened in two years; a far cry from the twelve years more it actually took.

Even though the decisions had been made to complete neither the work of locating the feeder nor the acquisition of the right-of-way, the actual construction began on that section of the work already funded. The Rock River and Harbor Act of 1876 appropriated money for the construction of four to five miles of canal just above the mouth of the Rock River near Milan. This section was given priority not only because it traversed the most populated region on the proposed route, but also because in providing a by-pass of the lower rapids of the Rock River it opened navigation to those central Illinois coal fields closest to the Mississippi River.

As it was constructed under the charge of Assistant Engineer Wheeler, the Milan section was made up of four and one half miles of waterway with two dams, three locks, and threeainter gates.

Progress on the Milan section did not last long uninterrupted. In August another questionable administrative move came to light. The contracts under which the work had been begun were based on estimates of a 19 to 20 hour work day. The eight hour work day had been a cause celebre for nearly ten years and during the summer of 1876, Congress was in the process of taking action on the issue. Unfortunately, the Hennepin contractors reached the Chief of Engineers for final official approval only after August 1 when Congress passed an act providing that laborers should not be permitted or required to work more than eight hours a day for the government. Wheeler, according to the company's records, was beginning to use a 12 hour day. This situation was compounded by the lack of a proper engineering staff and the lack of proper equipment. The contractor was not able to carry on the work as planned.

TENNESSEE CANAL
(Concluded from Page Five)

It was not long before Alabama again turned to Washington but the Congress turned a deaf ear to plead for more financial aid. The canal was kaptopen, at least part of the time, for a few more years. Some traffic was reported in 1844. Soon after, it was abandoned forever. Somewhat later, one engineer wrote a rather harsh epitaph: "It is a monument of misdirected energies and a foolish expenditure of money. It would be many years before another attempt to tame the river would be made." Nothing remains to be seen of the canal, the structures, the 800 miles or the islands. All such landmarks are beneath the deep pools behind TVAs huge Wilson and Wheeler Dams.

(This is the second of three articles on Alabama's canals by ACS Director L.W. Richardson. Address: Route 2, Box 340, Gainesville, GA 30501.)

Shubenacadie Canal


Residents of Halifax County, Nova Scotia, bordering the Shubenacadie canal system have agreed to form a district 14 lakes advisory committee at a meeting which saw Bill Naftel, a historian and employee of Parks Canada Heritage Properties, give a detailed account of the historic waterway which actually was in operation for nine years in the late 1800's.

Mr. Naftel, in the assistance of slides, traced the history from the arrival of the first Acadians in 1689 through 1877 when the New Englanders moved into the region and the first system of the river system was carried out.

While several surveys were carried out, the first sod was turned in July 1870, at the Port Wallis locks and by 1872 a 20-mile section in the centre of the system was finished, but by the end of 1871 work was abandoned.

It was not until 1874 that work again got underway to complete the system and the idea of the inclined plane rather than locks was used at Port Bello. In 1877 a sluice to low barge on the canal system was built and in 1881 it was opened end to end.

The canal then continued operation until 1878 hauling sawmill supplies, railway construction supplies, and supplies for the gold mines. With the coming of the railway, the need for the canal diminished as rail proved more dependable and quicker. The largest barge to be used was an 80 ton barge.

(Mr. Naftel is a Director of the American Canal Society.)

Erie Barge Canal

For canal buffs who would like a 160-mile, three-day cruise on a former ferry boat (the 'Emsla II') up through the locks of the Erie Barge Canal, we understand there is a good one available (other trips too) by contacting (Erie Barge Canal Cruises) Mid-Lake Navigation Company. M.D. 3, Skaneateles, NY 13152. Included in the cost of the 'Emsla II' tour, which starts and ends at Albany, are passage, all meals and snacks, motel accommodations for errante, and transport back to Albany, plus lots of local history. Ask for only $150 per person (double occupancy): single for $170, or triple for $130. Non-cord.

The First
Susquehanna Canal
(Concluded from Page Six)

not help greatly, so in 1617, the canal was sold by the Sheriff of Cecil County at a great loss to the original owners.

The new owners threw a wing dam cut into the river at Love Island in an apparent effort to force river traffic on the entire system channel of the river to use the canal. This move did not ordere the new owners to the rabbetmen and awk-owners who used the river and led to further deterioration of relations between Pennsylvania and Maryland.

The old 'Susquehanna Canal' was abandoned with the opening of the Susquehanna and Tidewater Canal on the west bank of the river in 1840, operating between Wrightsville, Pennsylvania and Havre de Grace, Maryland. This canal was built with the full cooperation of all parties handling in Pennsylvania and Maryland. By the time the Chesapeake and Delaware Canal had been opened (1825), Philadelphians now had their "sweater" route to the Pennsylvania and their 'Main Line Canal', which began at Columbia, just across the river from the mouth of the Susquehanna and Tidewater Canal.

ERRATUM
Correction: "Old Canal Freighters." American Canals #20, page 4, col. 2 should read: "She is now hauling railroad box and general freight between Cuten and Darien."
CANAL WATCHERS

An English Course on Canals

by Grace Elliott

A course on canals of Midland England will again be offered this year—July 30 to August 6 at Avoncroft College, Stoke Heath, Bromsgrove, Worcestershire, B60 4JS, England. While the format will be changed somewhat this year, it is an experience to be recommended.

We took the course last year. While we were not the first Americans to participate, apparently we were the first ones who could contribute anything about the canals on this side of the Atlantic. It was also amazing to us that a lot of pieces discussed there had been on previous English canal trips.

The course consists of lectures, slide presentations, films and field trips on various aspects of the English canal system—their development, engineering, economic aspects, future uses, the boats and the boatmen. The one that was most interesting to me was on the Birmingham Canal Navigation (BCN). It was so confusing before but between the lectures and the canal trips to view all four levels, it has become a fascinating place. We visited Gas Street Basin and the Worcester Bar. Farnell’s Bridge locks on the Birmingham and Frizeley canal. One of those locks is under the new post office building. We also visited the Long Boat at Bingley and Sawley Locks on the Aire and Calder Navigation.

From the Mohawk River: I slowly brought my boat down the narrow Club channel past the moored boats and into Lock 21. What a feeling! Imagine having your own boat in one of the old Erie Canal locks.

A flash back to the old canal days is inevitable when one is in such a situation. I could just see the balance beam gates swing open and closed for various barges as they made their way up and down stream. There ahead was Lock 22 (all filled in, but the lock wall tops can be seen) and then that famous Reversing Water which spanned the Mohawk River (now a highway). In a few moments I too would be crossing and looking down into that beautiful river. Locking west from Lock 21 is the old Truss Feed store of 1825 vintage, still standing and used as a club house.

(Canal watching is a wonderful pastime especially when one can take part by boating on old waterways. Last summer I had a wonderful experience at Lock 21 on the Erie Canal near Ithaca, New York. Lock 21 is still connected to the Mohawk River for 10 years the river was used as a feeder for the old Erie Canal. This old lock is still in use by the Schoonester Yacht Club as a boat launching basin.

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In the Mohawk River: I slowly brought my boat down the narrow Club channel past the moored boats and into Lock 21. What a feeling! Imagine having your own boat in one of the old Erie Canal locks.

The most exciting part of one trip was a boat ride (electric powered) through 1½ mile long Otley Tunnel. Some course members took turns going through the tunnel at one point where the lights were turned off. You could hear was the sound of boats along the tunnel walls and feel the movement of the boat in total darkness just as the diggers did a hundred years ago. It was an unbelievable experience.

Other outstanding things were a visit to Sporn Lane Locks. These are Bindley built locks now located under the expressway or as the English may say an overhead dual carriageway—the M 5. We also walked up part of the Stoke Flight and all of the Tandridge flight—a total of 35 locks in five miles. Those are the tides that tamed the navigation of Tandridge, reservoir so low but that was the big problem on English canals during the summer of ’76. We also visited Worsbridge to see Diglis locks on the River Severn and then walked around Diglis Basin that connects to the Worsbridge and Birmingham Canal. We also visited Stourport with its Basins to connect the River Severn and the Staffordshire and Worcestershire Canal at Wallis Hall. We visited Peter Kay’s boatyard where boats are built and repaired by the same methods used since canal boats were first built in England.

If anyone is interested, the course is called Midland Canals—In Town and Country. The fee is $225 plus V.A.T. at the rate of 15%. A postcard is required with your application form but it is possible to pay the full fee after arrival at the college. Incidentally that cost is inclusive—accommodation, meals, trips, and tuition. Expect college type rooms and meals but it is adequate. There are two pubs within easy walking distance. There is a canal from Stratford to Stoke on Trent about a mile away. What made anyone want to live?