AMERICAN CANALS

BULLETIN OF
THE AMERICAN CANAL SOCIETY

Vol. XXX, No. 2 Dedicated to Historic Canal Research, Preservation, and Parks Spring 2001

PRESIDENT'S LETTER

Greetings! As I sit here writing this letter, it is still the early days of spring and there is a bit of snow on the ground and more than a bit of cold in the air. But by the time you read this, the annual World Canals Conference in Ireland will no doubt be underway, or over. I'm sure that those of us who were able to get there had a tremendous time. Those who didn't will have to wait until the next issue of *American Canals* to read detailed reports of this year's conference.

Past issues of *American Canals* contained information regarding the tour and annual meeting the American Canal Society is holding with the Pennsylvania Canal Society on October 26-28, 2001. Tour Headquarters will be at the Plaza Hotel, 1718 Underpass Way, Hagerstown, MD 21740 (Exit #5 on I-81, one mile north of the junction with I-70). Single rooms are available for the tour at $62.00 plus tax and double rooms at $70.00 plus tax. Reservations must be made directly with the hotel by October 5.

The ACS annual director's meeting will be held at the Plaza Hotel at 3:00 p.m. on Friday, October 26. All ACS members are welcome to attend this meeting. We will then have a general ACS membership meeting in the same room of the Plaza Hotel from 4:30 to 5:30 p.m. The tour orientation program will be held in the Plaza Hotel that evening, in a different room than the ACS meetings, beginning at 7:30 p.m.

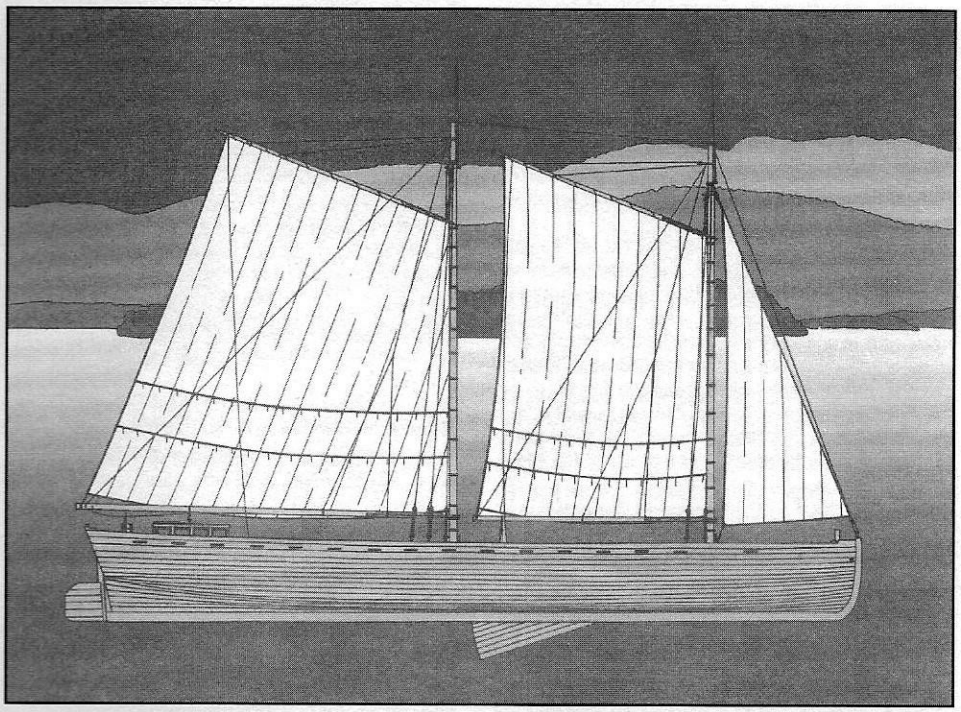
The tentative itinerary for the tour will have the buses traveling from the hotel to Dickerson, MD via Frederick to visit the Monacacy Aqueduct. We will then return upstream along the Potomac Valley, stopping at Point of Rocks, perhaps Lander, Brunswick, Weaverton, Antietam Creek, Shepherdstown locks, Ferry Hill, pass through Antietam Battlefield, stop at Dam #4 and end at Williamsport (lock, lift-bridge, basin, aqueduct, visitors center). The site and cost of the Saturday lunch are still to be determined. The Saturday banquet will be with the C & O Canal Association and held at the Williamsport Volunteer Fire Department hall, costing around $18.00. This hall is about a ten minute drive from the Plaza Hotel. There will be Sunday optional activity for those interested. Due to the large number of ACS members, we ask those who are interested in the tour to contact Dave Johnson, 9211 Wadsworth Drive, Bethesda MD 20817 at their earliest convenience, and ask to be placed on the tour mailing list. Dave is estimating that the cost of the tour will be in the $55.00 to $60.00 range.

I hope that the ACS membership can make a good showing at this tour. We hope to work toward making the meetings during the years in which the World Canals Conference is on the other side of the Atlantic into a big thing on this side. This tour should make it easy for us to get off to a good start.

We are making a beginning on the early history of the ACS, but still need more info on the society and the lives of our three founding fathers.

We had a flurry of replies to my comments last time about canal corridor parks. The director of the local park district that inspired my comments wrote a long reply that is published elsewhere in this issue. I am pleased that he is aware of his organization's shortcomings and is making an attempt, on paper at least, to correct them. Most of the people replying on this subject appear to believe that the problems that have arisen (ranging from "towpath trails" nowhere near a towpath to historically laughable dioramas) have done so more out of ignorance than from actual attempts to defraud the funding agencies. One such reply stated that the professional people installing the parks know a lot about bikes and trails, but little about canal engineering or history. The amateurs advising them are not being taken seriously because they are ama-

The *Lois McClure*



An 1862-class sailing canal schooner to be built for the Lake Champlain Maritime Museum. Story in a future issue.

American Canals

BULLETIN OF THE AMERICAN CANAL SOCIETY

Editor: **David F. Ross**
Associate Editor: **Kate Mulligan**
Contributing Editors: **David G. Barber**
Bruce J. Russell
Address

For memberships, subscriptions, change of address, and other business matters:
c/o Charles W. Derr, 117 Main St., Freemansburg PA 18017.

For *CANAL CALENDAR* items and for news of local, state, and regional canal societies:
c/o Kate Mulligan, 1301 Delaware Ave., SW, Washington, DC 20024; ph. (202) 484-3590; email: kmulligan@gis.net

For other editorial matters:
c/o David F. Ross, 840 Rinks Ln., Savannah TN 38372-6774.

The objectives of the American Canal Society are to encourage the preservation, restoration, interpretation, and use of the historical navigational canals of the Americas; to save threatened canals; and to provide an exchange of canal information. Manuscripts and other correspondence consistent with these objectives are welcome.

Annual subscription to ***American Canals*** is automatic with A.C.S. Membership. Annual dues: $20.00. Single copies $3.00. Four issues per year.

ISSN 0740-588X

PRESIDENT'S LETTER (CONT.)

teurs. There are a number of good canal historians and engineers associated with the ACS and several local universities. Some of these people should be hired by local canal corridors. They would then be taken seriously as they would be professionals. I was hired by the Cuyahoga Valley contingent of the National Park Service to act as a consultant in the mid 90s for their planned Canal Boat-Building Museum. My recommendations were followed to the letter (probably because I was getting paid for them) and the museum, aside from being in a building not really suited for it, is doing a wonderful job in teaching people how Ohio & Erie canal boats were constructed.

Our Parks Committee will undertake the writing of guidelines for future and present canal corridors that will be submitted to the directors and membership, perhaps later this year, for their helpful additions and comments.

A few personal comments now, if you don't mind. I officially retired from the Goodyear Tire & Rubber Company as of February 1, 2001. So, theoretically, at least, I should have more time to devote to the ACS and it's members–you! One of my first acts as a man of leisure, was to acquire a computer. I am now almost up to the 21st century. I can be contacted by e-mail at woodscanalone@aol.com. I hope to hear from many of you, soon.

Till next time, HEADWAY TO YA!

Terry K. Woods

CANAL CALENDAR

May 24 - June 3, 2001. Canal Tour in Southwest England. Sponsored by Historic Preservation Center at Bucks County Community College. Cost $1,850, which includes airfare from Philadelphia, lodging on canal boat, 2 nights in a Hilton hotel and some meals. Call: (215) 968-8286.

June 9, 2001. Waterloo Canal Day. Waterloo Village, Stanhope, New Jersey. Call 908-722-7428.

June 15-23, 2001. James River Batteau Festival. Virginia Canals and Navigations Society. Call 804-288-2334.

June 17, 2001. Canoe from Violettes Lock to Great Falls. C&O Canal Association in Maryland. Call 301-229-2398.

June 22-28, 2001. Erie Canal Cruise. $1545 per person, double occupancy. River Valley Tours, Karl Rodman, President. Call 800-836-2128.

June 23, 2001. Yardley Canal Festival. Along the Delaware River and in downtown Yardley, PA. Call 215-862-2021.

July 6-8, 2001. Erie Canal Cruise from Syracuse to Albany, $490 double occupancy. Canal Society of New Jersey. Call: 908-722-9556.

July 6-22, 2001. Trip featuring Poland's Elblaski Canal. $2,500. Call trip leader Fred Heide at 973-376-4763.

July 21, 2001. Champagne Reception and Dinner Dance. Delaware and Hudson Canal Historical Society and Museum. High Falls,NY. Call 845-687-9311.

Aug. 11, 2001. 9:00 a.m. Canal Classic 5K/Fun Run/Walk, beginning in Navarre, OH. Ohio and Erie Canal Corridor Coalition. Call 330-493-4588.

Aug. 25-26, 2001. Williamsport Canal Days in Williamsport, MD. Call 301-223-7010.

Sept. 9-14, 2001. Elderhostel Course. "Boats, Planes, Trolleys and Trains: Transportation in the Hudson Valley." Hosted by D&H Canal Museum. Call 845-687-9311.

Oct. 3-8, 2001. Through bike trip on the C&O Canal. Camp or stay at B&Bs and motels. Call 301-223-7010.

Oct. 14-19, 2001. Members Dinner and Slide Presentation. "Art and the Erie Canal." Hosted by D&H Canal Museum. Call 845-687-9311.

Oct. 19 - 21, 2001. Field Trip to the St. Lawrence Seaway. The event will be hosted by the Riveredge Resort in Alexandria Bay, the heart of the 1000 islands region. Canal Society of New York State. Call 315-479-7473.

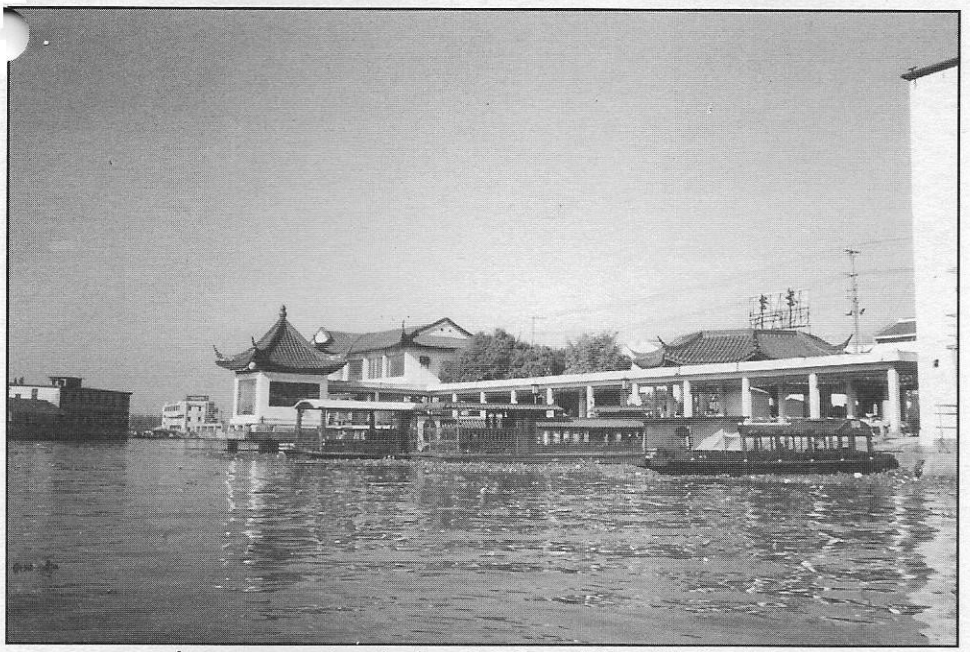
Oct. 26-28, 2001. A.C.S. directors and membership meeting, in conjunction with Pennsylvania Canal Society C&O Canal field trip. Hagarstown, MD. Contact: David M. Johnson, 301-530-7473.

DEADLINE: Material for our next issue must be on the associate editor's desk no later than July 1st, 2001.

China's Grand Canal

THE WORLD'S OLDEST MAN-MADE WATERWAY

by Bruce J. Russell, Contributing Editor



A passenger terminal on the Grand Canal in Suchow

As most canal historians and enthusiasts are aware, the canal era in the United States took off in the 1820s with the opening of the Champlain, Erie, Morris, Lehigh, Union, and other waterways. All of these were towpath canals on which boats were pulled by teams of mules or horses walking along an adjacent trail. In Europe the dawn of the canal age came earlier. During the mid-1660s work commenced in France on the Canal du Midi which originated on the Mediterranean Sea and worked its way inland toward Toulouse. Many years later an extension brought it to Bordeaux and the Bay of Biscay on the Atlantic Ocean. In England the digging of artificial waterways dates from the mid-1700s when the Industrial Age was just beginning. The mostly narrow, 7-foot-wide British canals transported coal and iron to early forges and factories.

Undoubtedly many people look upon Europe as the cradle of canals, where they were initially planned, surveyed, and excavated. This is incorrect. Artificial waterways began in China in approximately 300 B.C., and continued to be constructed until the 1700s. Their major purpose was to connect natural rivers and streams in order to create a means of moving people and cargo as efficiently and as cheaply as possible. By the year 100 A.D., China's population had already reached 200 million, and it was necessary to transport huge quantities of grain from agricultural areas into the major cities. Furthermore, China was forced to defend itself against invaders from Mongolia and Manchuria. One of China's defensive bulwarks was the famous Great Wall, but the system of canals also served a national defense purpose, facilitating the efficient movement of troops and supplies.

When Marco Polo, the Venetian explorer, visited China between 1271 and 1295, one of the things he remarked upon in his writings was China's excellent system of canal and river navigation. Before reaching China via an arduous overland route, he believed that his native Italy was the most advanced and civilized area of the world. He soon came to realize that it was China which was far ahead technologically, and the West which was lagging behind. One of the things which shocked him was the notion among many Chinese that the Europeans, whom they derisively referred to as the "long noses," were barbarians. In their scheme of things, China was the epicenter of culture, science, knowledge, and learning.

Marco Polo witnessed many things in China, especially after becoming a member of the imperial household. Among those which left him with a lasting impression was the Grand Canal, still indisputably the world's longest man-made waterway. The canal, averaging about 110 feet in width, once extended over 1,085 miles and connected Beijing in the north with Hangchou in the south. (Hangchou is close to present day Shanghai.) When one considers that the 1820s vintage Erie Canal in New York State was slightly less than 400 miles long with a 40-foot width and 4-foot depth, the immensity of the Grand Canal becomes apparent. What's also obvious is the logic behind its construction. China's two principal rivers, the Yellow in the north and the Yangtze in the south, flow from west to east. The Grand Canal, which connects them as well as several others, has a north-south orientation. It thus created an integrated system of water transport.

The Grand Canal was large, and although some vessels traveling upon it were pulled by animals or men walking along a parallel path, others were equipped with sails and were similar to the junks still in use today. In addition to massive grain boats with deep holds, there were specialty vessels for use by the emperor, other high officials, members of the nobility, and Buddhist monks. Likewise there were boats used solely to transport soldiers, in effect ancient versions of modern troop ships. At various locations, boat-building yards employed thousands of carpenters and fitters. Although today most of eastern China is devoid of forests, the trees having been chopped down centuries ago to provide wood for fuel, this was not the case a thousand years ago. Lumber for boats was then plentiful, and water-powered sawmills were used to cut it into boards.

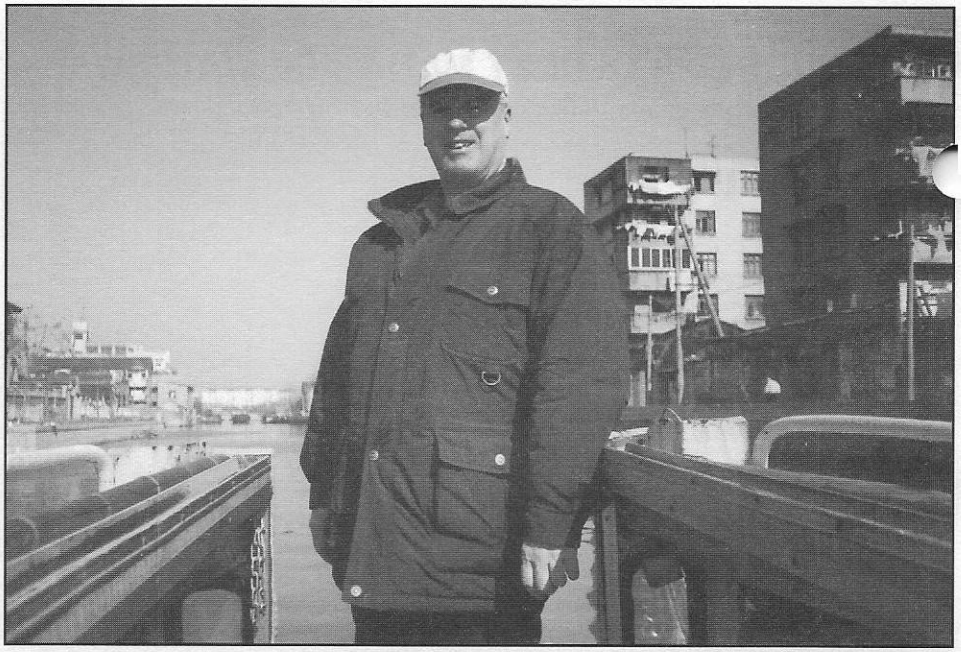
While there are no photographs depicting the 1,085-mile-long Grand Canal as it existed during the 1200s, illustrations do exist in the form of paintings, drawings on vases, and other artwork. These show the various types of craft which navigated its waters. One of the most interesting was the so-called "dragon boat," which was reserved for use by people of importance and stature. On its bow and stern were enormous dragons carved from wood and painted in brilliant colors. Until the early 20th century, when superstitious beliefs among the Chinese masses began to decline, dragons had great symbolic im-

portance. They struck fear in the hearts of tens of millions of peasants who actually believed they existed and breathed fire. Hence having carved dragons on a boat signified that its owner was somebody to be reckoned with. Although dragon boats no longer venture forth upon the Grand Canal and other navigable waterways of China, they can still be found on some of its lakes where people come to relax on weekends and holidays.

Illustrations of Grand Canal vessels sometimes depict them being propelled by oars rather than by sails or animals. The oarsmen, if not slaves, were clearly people occupying a lowly status in life. To help these unfortunates row in unison, a man normally sat at the head of the galley and beat a cadence on a drum.

China's Grand Canal was constructed in stages. The initial segment, known as the Shanyang Canal, was between Huaiyin on the Huai River and Chenchiang on the Yangtze. It opened in approximately 300 B.C., making it the world's oldest continuously used man-made waterway. In the year 607 A.D. It was deepened and improved. This permitted larger vessels to travel upon it. Whether slaves or free laborers dug this canal and performed the renovations after its initial 900 years is unknown. Possibly farmers worked on the Grand Canal during the winter season when they weren't doing tasks in the fields and rice paddies. By this time China had a very large population, making the cost of labor inexpensive. Undoubtably hundreds of thousands toiled on the waterway, hauling away dirt and constructing side walls. In certain respects it was a project comparable to building the Great Wall. It certainly dwarfed the erection of Egypt's pyramids.

Perhaps because the waterway's first portion (which eventually came to be known as the Southern Grand Canal), was successful, plans were formulated to build a northern extension in the direction of Beijing. (Until the 1970s Beijing was known as Peking.) A formidible army of slaves and free laborers was assembled, and digging began in 610 A.D. It continued for several centuries. When the work ceased in 1126, China possessed an internal navigation system extending from its southern provinces to a point about 200



The author, at the close of the 20th century, emulates the 13th century tourist Marco Polo in his admiration for China's internal navigation system.

miles south of Beijing. The nation's two longest rivers, the Yangtze and the Yellow, were joined by a man-made canal. This was at least 500 years before Europe began construction of canals for transportation purposes. No wonder most historians are in agreement that during this time the Chinese were correct in boasting that their civilization was the world's most advanced.

In 1279 A.D. hordes of Mongolians swept south into China in spite of the Great Wall, the purpose of which was to keep them out. Although these invaders were seminomads and largely uneducated, they quickly began to adopt Chinese ways and customs. The Mongol warlords and chieftains insisted that their children be tutored by Chinese scholars and taught diverse subjects. Over the years, the Mongols acquired the same level of knowledge as that of the people they had subjugated.

When the Mongolians had solidified their hold over China, they established their capital at Beijing. In order to supply it with sufficient food, the decision was made to extend the Grand Canal northward. The initial surveys were done about 1282 A.D., and then hundreds of thousands or possibly a million laborers using primitive tools began the actual work. Since Marco Polo was present in China at this time he undoubtably observed this herculean task taking place. In his native Venice, some level of democracy existed, but in China an emperor could order anything done, and if millions of workers were needed, they were supplied.

The extension of the Grand Canal into Beijing was finished in 1310 A.D. With an adequate supply of grain from the fertile south guaranteed, the Mongols proceeded to rule over their 300 millio subjects with a renewed sense of security. They knew that with so many people, the prospect of famine and mass starvation was ever present. A severe famine, if unchecked, might well be the cause of a popular uprising which could topple their rule. As the ancient Romans kept their masses content with bread and circuses, so the Mongols made certain that the food supply to cities, both on the Grand Canal and on the rivers intersecting it, was never interrupted. It's not known whether they staged circuses, but acrobatic performances have been a hallmark of Chinese civilization for centuries. It's tempting to imagine that troupes of acrobats traveled from place to place upon canal vessels like the showboats which were common on American waterways during the 19th century.

During the 1600s and later Europeans were able to insure that their canals had an adequate water supply by studying how the Chinese solved th problem, since their waterways als possessed summit levels. At various points the Grand Canal received water from adjoining rivers and mountain

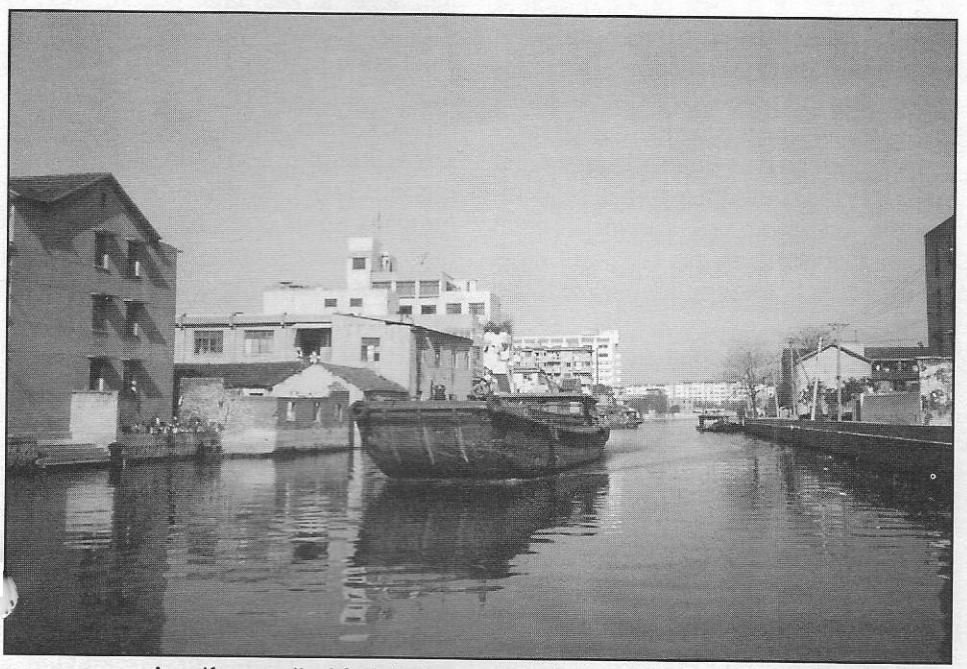
streams. Artificial lakes and reservoirs likewise supplied water in areas where droughts were common. To prevent seepage of water from the prism and bottom of the canal, it was lined with clay or some other nonporous material.

It must be kept in mind that the Grand Canal was over a thousand miles long, or about three times the length of New York's Erie. For maintenance purposes, it was divided into sections. Provincial rulers were responsible for making certain that everything was in order in their districts, so vessels could proceed uninterrupted. From time to time the emperors and their entourages made inspection tours aboard luxuriously appointed vessels decorated with gold and silver. If a specific section was found to be in disrepair, the local governor faced removal and possibly death. Grounding of the royal barge was unthinkable.

One of the things Marco Polo mentioned in his description of the Grand Canal was its use of locks to overcome elevation. While the original waterway in southern China traverses primarily flat terrain, the northern extension towards Beijing required some means of overcoming elevation. Initially the Chinese resorted to inclined planes. Using ropes and pulleys, vessels were dragged on rollers up slopes from one level of the canal to a higher one. As many men as were necessary were used to perform this task. Proceeding in the opposite direction, boats were often positioned on a spillway. Water from a dam was then released and the vessel was skidded down a slope to the lower level of the waterway. This process sometimes caused damage to the boats. Consequently, during the 1200s the Chinese invented a primitive form of lock, with flat rather than mitre gates. Obviously the Chinese were unaware that gates which close in the form of an angle can withstand greater water pressure. Most historians credit the development of the mitre gate to the Dutch during the 1300s. Eventually, the Grand Canal was refitted with mitre gates.

From the writings of visitors to the Grand Canal during the late 1700s, one of its most intractable problems was silt which entered the canal from the many rivers it intersected. Over time it accumulated to such an extent that an inadequate depth for navigation resulted. Thus it was sometimes necessary to shut down a section so that teams of laborers could clear it, using baskets attached to poles, slung over their shoulders. With thousands of "coolies" assigned to the task, the job was accomplished quickly. Today the same role would be performed by giant earth-moving machinery.

In 1368 the Mongolians were driven out of China, and the Ming Dynasty began. China was once again ruled by Chinese. It was during this period that the Grand Canal attained its full length of 1,080 miles. It was extended south from Chenchiang to the cities of Suchow and Hangchou, both in the general vicinity of present day Shanghai, a city established in the mid-1800s by European merchants and traders anxious to "open up" China. At Hangchou the Grand Canal meets the Yellow Sea, which is part of the Pacific Ocean. Now it became possible for ocean vessels, such as the graceful American clipper ships to transfer their cargos to canal boats for transport to inland destinations. This meant that besides grain, the waterway would also be utilized to move other kinds of commodities.

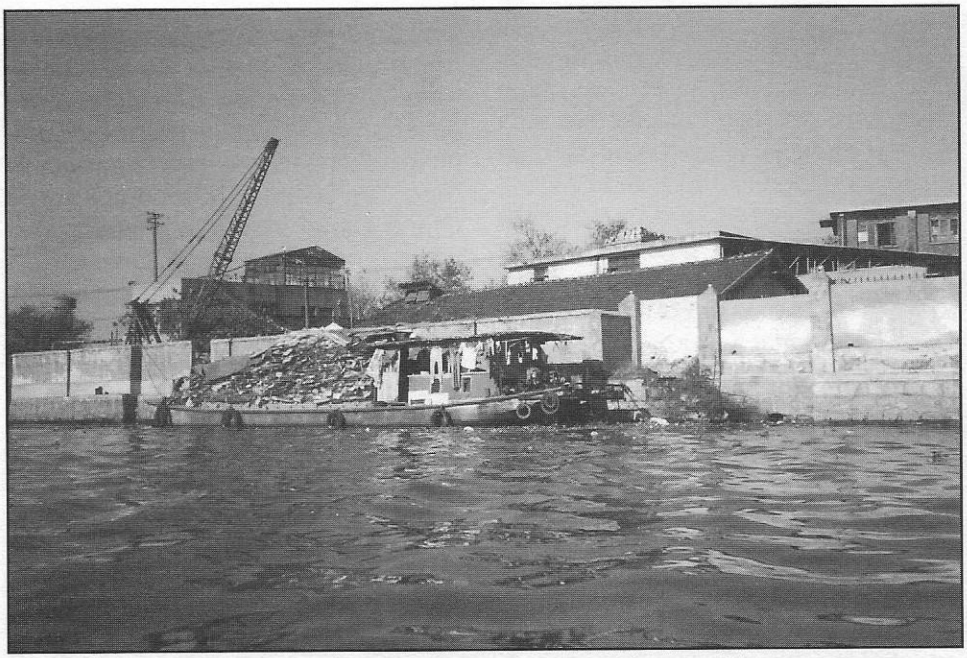


A self-propelled freight barge heads north from Suchow. The captain and his family live in the stern section.

Although most of the Grand Canal consists of man-made channel, there are a few places, primarily in the north, where existing rivers were canalized in much the same way that New York State converted the Mohawk River into a canal to handle barge traffic. In order to accomplish this, their beds were cleared of rocks and in many cases retaining walls were built. They were also straightened, and locks and dams were constructed to regulate their depth. Water from these sections was used to help supply the segments which were genuinely artificial. It's estimated that between 15% and 20% of the Grand Canal incorporates natural rivers.

The Grand Canal enabled commerce to flow throughout China in much the way that contemporary railroads and highways now facilitate the movement of freight and passengers. For example, a vessel such as a junk could begin its journey at some point on the Yellow River, and then enter the Grand Canal and travel almost 800 miles to the ocean at Hangchou. Alternatively, it could proceed approximately 600 miles south to Chenchiang, to connect with the Yangtze the world's third longest river (after the Nile and the Amazon). This river, which has its origins in mountainous Tibet, is China's equivalent to America's Mississippi. Along its course are over 14 major cities. Foreign tourists travel over it primarily to pass through the famous gorges, which are among the world's most spectacular sights.

In 1644 calamity again struck China from the north. Manchurian invaders defeated China's armies, and established the Manchu Dynasty which survived until 1911 when China became a republic. Because they desired to con-



Scrap metal is one of the important comomodities carried on the Grand Canal.

solidate their hold over a nation as large and populous as China, the Manchus made transportation a top priority. Thus the Grand Canal was maintained in good repair. Dredging and construction of retaining walls in populated areas were ongoing projects. It was during the early Manchu period that promenades and foot paths were added. Trees were likewise planted adjacent to the waterway to provide shade and for general beautification. Improvements were likewise made to locks, feeder channels, and reservoirs. Most people agree that the time from 1644 until about 1800 was the best for the Grand Canal.

The 19th century witnessed a slow decline of the 1080-mile waterway. Major flooding, perhaps partly caused by deforestation, caused extreme damage. Embankments were washed away, and locks were allowed to fall into disrepair. Efforts to remove silt deposits were reduced. Thus large vessels couldn't navigate the waterway, and grain shipments from south to north were reduced. In addition, China began to experience other difficulties. Europeans began to establish trading outposts along its coastline, and slowly their influence extended inland. At various times China attempted military resistance against the British, French, German, Russian, and Japanese colonizers. It always lost. The result was more of what China today refers to as "the unequal treaties." The most glaring was the 1842 Treaty of Nanking (Nanjing) which gave foreigners almost free rein within China. One of its consequences was the importation of opium and other addictive drugs into China. Within decades, tens of millions of Chinese were hopelessly addicted.

After about 1860 the entire northern segment of the Grand Canal from Huaiyin to Beijing was abandoned. For many years prior to this, it had been allowed to become silted. Flood damage was often not repaired, causing water to escape from weakened embankments into the surrounding fields. Without a doubt, the loss of its principle means of north-south transportation weakened China and made it even more vulnerable to foreign exploitation. Lacking a means of transport, the government in Beijing was unable to move soldiers into the southern provinces to combat the European and Japanese colonizers. It was during this era that Britain solidified its hold over the port of Hong Kong.

In 1911 the Manchu emperor was overthrown by Chinese nationalists who created a republic. Among its goals were the elimination of foreign influence, and restoration of the nation's transportation and communication system. However by this time railroads were being built, and the new government saw little need to rehabilitate hundreds of miles of the Grand Canal. Consequently, the disused northern portion which had formerly allowed boatloads of grain to be sent to Beijing remained shut. Gradually peasants began to remove the stones which formed its lock chambers and retaining walls. Its dried up bed or prism was sometimes used for a road or to erect houses. Although many traces of it survive, one must know just where to look for them. In short, the northern section of the Grand Canal met the same fate which befell many of America's canals following their closure between 1880 and 1924.

The southern section of the waterway fared better. During the 1930s under the Nationalist government of Chiang Kai-shek much of the portion from Huaiyin to Hanchou was entirely reconstructed with new power-operated mitre gates and flood control devices. In many respects it was brought up to the standards of today's New York State Barge Canal. Large, steam-powered riverboats from the Yangtze could now enter the Grand Canal at Chenchiang and head either north to Huaiyin or south to Hangchou and the Pacific coast. These vessels carried both passengers and freight. North of Huaiyin as far as Chining the waterway remained unimproved and unmodernized; beyond Chining it was abandoned.

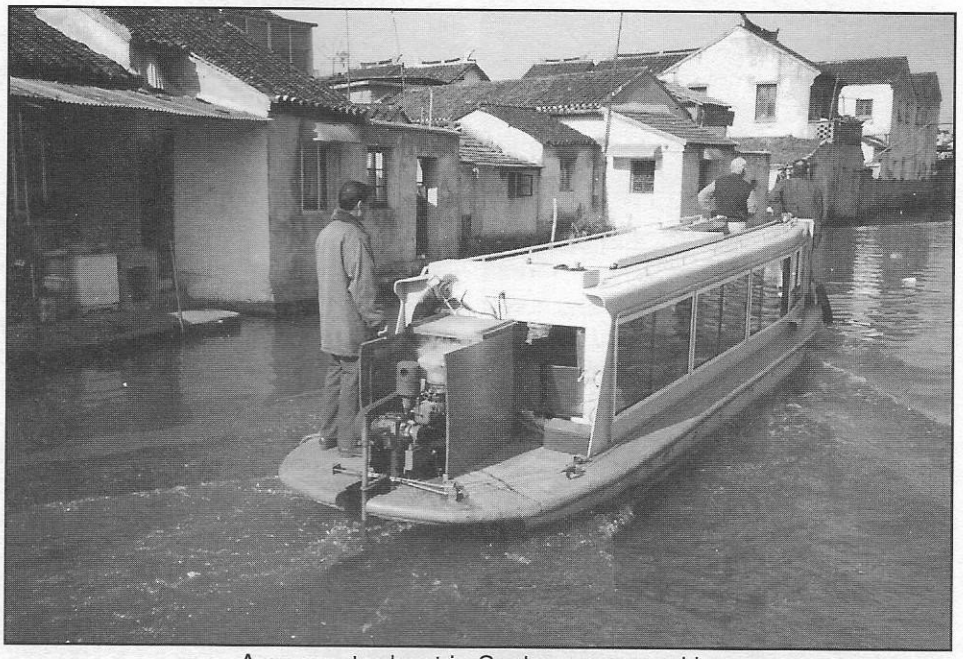
In 1949 China came under Communist rule. Initially an ambitious plan was announced to restore the entire Grand Canal over its 1,080 mile length, and to bring it up to the standards of modern European inland waterways. However this scheme was later scaled back to include only the Chenchiang to Hangchou portion. Between 1958 and 1964 this rebuilding of the ancient canal took place. It was straightened, widened, dredged, and fitted with the most modern locks. It was now capable of handling boats up to 300 feet long with up to 600 tons capacity. Much of the work, as in days gone by, was done by hand, although some machinery was available. Once everything was completed, southern China possessed an up-to-date, efficient, high-capacity inland navigation system which could be used by barges, both self-propelled and tug hauled, and by medium-size steamboats offering passenger accommodations. In more recent times, the steam engines have given way to diesels.

For purposes of comparison, can one imagine the United States making a major investment in canals during the

1950s when highway mania had taken hold? Hardly! It was during this time that the New York State Barge Canal lost most of its commercial business to trucks. Loading docks which until the late 1940s were active now sit forlorn and derelict–reminders of a bygone era. But in China, still looked upon as a backward country by many people, the advantages of water transport were realized and an old canal was given new life, at least in its southern portions. Modern maps of China clearly show the route of the Grand Canal, and it's mentioned in most sight-seeing guides sold to tourists.

During the 1970s China, which had been virtually inaccessible since 1950 to visitors from the non-Communist West, slowly began to open its doors. Although most itineraries available to foreigners included the Forbidden City in Beijing, the nearby Great Wall and Ming Tombs, the terra cotta statues in Xion, and cruises on the Yangtze River through the famous gorges, others centered around Shanghai, the country's largest city with 13 million inhabitants. Last November this writer took a 7-day Shanghai tour which was advertised in a travel publication and priced very economically. One of the optional side trips was a visit to the city of Suchow, a silk production center often referred to as the "Venice of China," and a half-day excursion on a portion of the Grand Canal. I was most curious to see this ancient, man-made waterway, completed for over 1,000 miles before Europe or America even dreamed of canals. I hoped I would be as impressed with it as Marco Polo had been in the 1200s when he lived for 17 years in China.

The train from Shanghai brought us to Suchow's enormous, modern station in less than 3 hours. From the station, the guide escorted our group of nine across a large plaza and then a road. Directly in front of us was the Grand Canal and a terminal for passenger carrying boats. This appeared to be of recent vintage, but built in traditional Chinese architectural style and topped with small green pagodas. The close proximity of the train station to the canal boat terminal reminded me of the similar arrangement that once existed at Lake Hopatcong, back home in New Jersey. Passengers could disembark from Lackawanna Railroad trains and walk



A commuter boat in Suchow, powered by a recycled diesel truck engine.

less than 200 feet to a branch of the Morris Canal which gave access to the lake. From about 1880 until World War I, well-to-do bankers and stockbrokers alighted from trains and boarded steam-powered launches and yachts which proceeded through the quarter mile long canal and into the open lake, where their summer homes lined the shores. The Morris Canal was abandoned in 1924, and its branch joining the train station with Lake Hopatcong is now filled in.

Both large and small vessels were tied up at Suchow's dock. Since there were less than 10 of us, a small boat was used for our canal voyage. At the dock I noticed what appeared to be a ticket window as well as schedules posted on a wall. Of course since they were all written in Chinese characters I could not decipher them. Fortunately our guide spoke passable English, and as soon as we pulled out into the Grand Canal I began to ask him questions. One was whether much freight traffic was still being handled, especially since China appeared to have no shortage of railroads and highways. I need not have inquired. Just as we rounded a bend, a large freight barge appeared. It was riding high in the water since it was obviously empty. As we passed I could see that it was self-propelled and that the captain and his family occupied quarters in the stern. His wife, who gave us a friendly wave, appeared to be cooking lunch. Laundry also fluttered from a clothes line. Lining the vessel's sides were old automobile or truck tires attached to ropes, to serve as fenders.

As we proceeded northward on the Grand Canal, I noticed other, similar self-propelled barges averaging about 150-250 feet long and moored along the banks of the waterway. Varying kinds of commodities were being loaded and unloaded–gravel, sand, bricks, coal, wood in the form of logs, and scrap metal. In short, bulk products were what the Grand Canal transported. It was most definitely a working canal. I estimated its width to be about 100 to 125 feet. Its sides were lined with stone walls which appeared to be of ancient construction, and more contemporary concrete ones. Here and there iron and steel mooring rings were attached. I inquired of the guide as to its depth, but he didn't know. However judging from the size of the barges I saw, it must have been at least 10 to 12 feet. In contrast to the situation on American and European waterways, I saw absolutely no pleasure boats such as cabin cruisers on the Chinese waterway.

In response to my questions, the guide explained why plans to reopen the northern part of the canal had been abandoned. One of the reasons was that the northern part had to be artificially supplied with water in many locations. This meant that dams and reservoirs would have had to be constructed and maintained. Furthermore, unlike the

southern part, the northern segment would have been closed during January, February and March on account of ice. Northern China often experiences temperatures more than ten degrees below zero. According to the guide, most of the traffic on the Grand Canal is between Hangchou and Chenchiang, where it meets the Yangtze River. From Chenchiang, vessels can proceed hundreds of miles up the Yangtze to Nanjing and Wuhan, deep in China's interior.

Today no passengers make complete voyages on the surviving southern part of the Grand Canal, since much faster railroads parallel it. However every day an overnight boat with sleeping berths departs from Suchow at 5 p.m., bound for Hangchou about 120 miles south. It arrives on the following day after traveling for 14 hours. It's possible to book passage on it as described in several guidebooks. It is reminiscent of the passenger-carrying packets on the Erie Canal, where passengers slept on tiny shelf-like beds or in hammocks suspended from the ceiling of wooden boats pulled by mules.

Most of the passenger traffic in Suchow and other canalside cities, however is local. For instance, from the terminal as Suchow it's possible to board vessels to reach points both north and south of the city for a distance of about 10 miles in each direction. Along the way, they make stops at different landing stages. Some of them have canopies and ticket booths. In essence this is a waterborne commuter operation. Obviously in a nation where less than 1% of the population owns a private automobile, all forms of public transport play a role. As our boat continued northward, I could observe people getting on and off the commuter vessels as they arrived and departed from the landing stages. All of these boats were powered by stern-mounted truck engines. The much bigger self-propelled freight barges also used this type of engine. Three and sometimes four were attached to their sterns, each driving a separate propeller shaft. I suspect that the boatmen purchase discarded truck engines and rebuild them for maritime use.

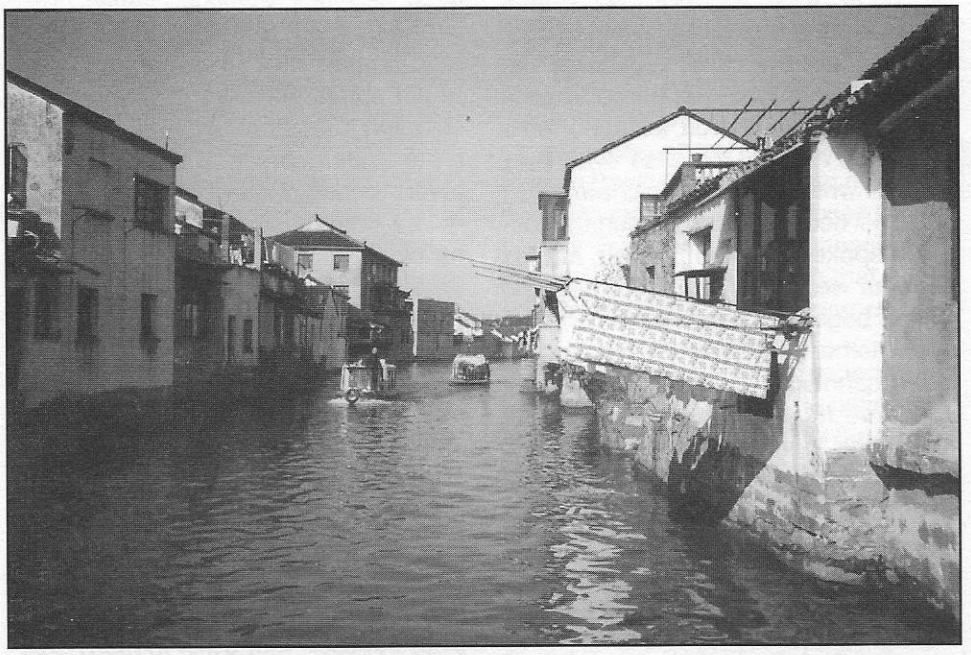
At one location I noticed a 100-foot boat moored to a sidewall, beautifully decorated with wood carvings of birds, animals, and even dragons. Strung along its open upper deck were red lanterns. According to our guide, this was a "party boat," used for weddings and other forms of celebrations. He said that at night it was quite a sight to behold.

I was amazed at a lack of odor from the canal, considering the fact that most of the barges I saw had living quarters which dumped their wastes directly into the water. In addition, many canal side buildings also have pipes conspicuously extending from their basements almost into the canal. The only explantation I could arrive at is that since this is a very wide canal which receives some of its water from streams flowing into it, there is some sort of flushing action taking place. Perhaps the objectionable material simply floats south in the direction of Hangchou and ultimately the Pacific Ocean. I seriously doubt whether modern anti-pollution devices such as chemical holding tanks exist in China. Perhaps when its wealth increases substantially they will begin to appear. I never saw anybody swimming in the Grand Canal or fishing from its banks.

After traveling north for about an hour our vessel turned into a side canal. I subsequently learned that in most of the cities along the Grand Canal there is a network of local, much narrower waterways which penetrate deep into residential neighborhoods. These serve as streets, and houses and shops face onto them. In the case of Suchow there are so many of these minor waterways that it has been given the title "Venice of China." As in the Italian city, people obtain their groceries and other supplies directly from boats. When they have to go somewhere they hail a "water taxi" which maneuvers to their tiny dock and picks them up. As we proceeded through this dense plexus of mini canals I spotted one building with a barber pole in front. Inside two men were having their hair cut.

Two specialty vessels intrigued me. One was a floating fast food restaurant. In its midsection was a wood-fired cauldron containing some kind of soup-like food. People would come to their doorstep and motion for it to dock. Once it did, their large bowl would be filled from the cauldron. I am certain that within a few years they will dispense their product in plastic "take out" dishes. The other kind of vessel which caught my eye was more mundane. It was a garbage boat. People placed their refuse in paper bags on their dock and the refuse vessel simply collected it and moved on to the next home. I also noticed boats selling household wares.

The guide informed our group that under communism this type of individual business was discouraged since it represented capitalism. But in the 1990s China began to move away from Marxism and now has a mixed economy in which it's possible to operate a private



Suchow is sometimes called the Venice of China because of its system of subsidiary canals that take the place of streets in residential neighborhoods where laundry hangs on poles to dry.

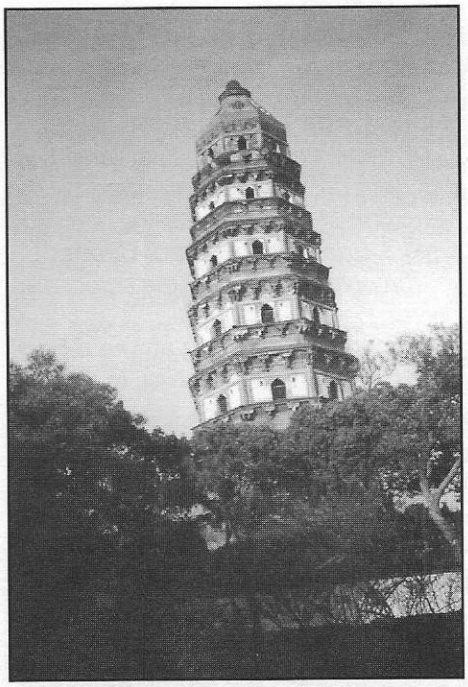
enterprise. The number of these merchant boats has greatly increased on the canals and inland waterways.

As we proceeded through Suchow's canals, making right and left turns at junctions, I could clearly see that they were hundreds of years old. The walls lining them were composed of stones meticulously fitted together by skilled masons. Likewise the houses themselves were made from rough, hand hewn bricks which were partially covered with cement and stucco. From many of them long poles protruded over the narrow waterway where two vessels could barely pass one another. Upon them laundry was hanging. I thought to myself that here was a scene which has probably not changed in a thousand years. The principal difference now is that the boats are motorized. In the past they were poled like the gondolas of Venice.

Occasionally we passed beneath bridges which permitted residents to go from one side of the canal to the other. All appeared to be hundreds of years old. Many had iron clamps holding their stonework in place. Some had roofs which were made out of tile. The purpose of these was to provide shelter to people who often stopped in the center of the spans to talk and socialize. Sometimes boyfriends and girlfriends stood on the bridges holding hands.

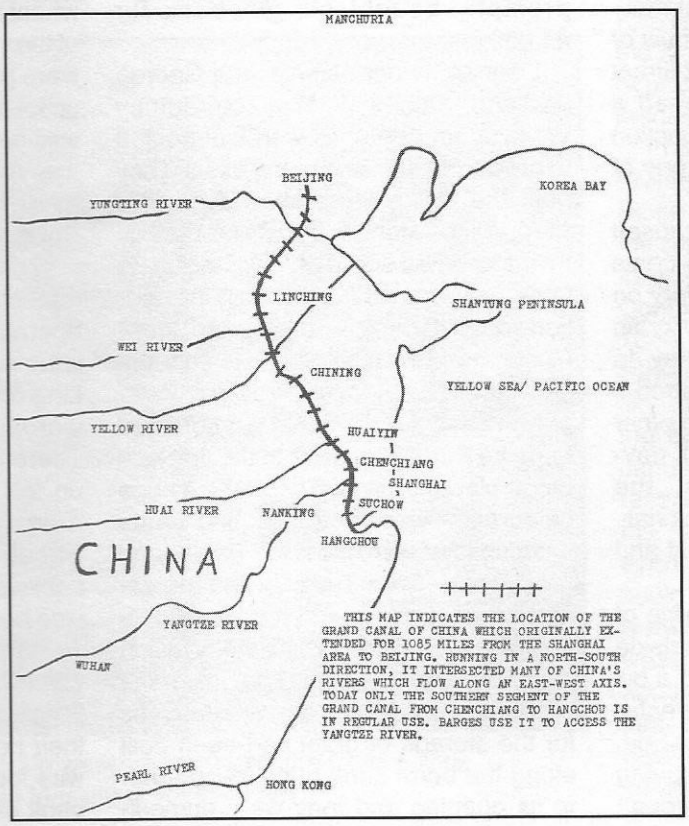
An interesting book about Suchow is available in the railroad station bookstore. It contains photographs (with captions in Chinese and English) taken during the 1920s and 30s before the Communist era which began in 1949. Many depict views along both the wide Grand Canal and the smaller neighborhood waterways. On the former, large grain carrying vessels with sails are common. Likewise the dress of the people standing on the embankment is fascinating. All of the men were attired in long robes, and their hair was usually in a braid. Most wore a skull cap. The women were dressed in long, ankle length gowns made either of silk or cotton. Today everybody in China wears modern, western-style clothing. The communist era baggy pants and shirts are also a thing of the past.

The book also contains views of Suchow as it looked decades ago. Alongside the Grand Canal were temples and pagodas where the Buddhist religion was practiced. With one exception, these are now gone, as are the stately mansions of wealthy merchants. The guide later informed me that during the early 1970s Cultural Revolution all of these structures were heavily vandalized, set ablaze, and destroyed. The Red Guards rampaged for days through Suchow destroying anything which symbolized the old China. It was also during this time that the beautiful trees lining the banks of the Grand Canal were hacked down and cut up for fire wood. The result was a less attractive city. Today there are plans to reconstruct many of these temples, pagodas, and mansions. Luckily good, clear photos exist. In Russia similar destruction of ancient buildings took place and today many of them are being rebuilt. Also missing are the gates and arches which marked the intersections of the side canals with the principal waterway. When a vessel turned to enter one of these it passed beneath either a gate or an arch which was decorated with either Buddhist or nonreligious art. Different neighborhoods took great pride in these. It is to be hoped that some will be reconstructed.



The leaning pagoda, built about 900 A.D., a lonely survivor of the Cultural Revolution.

Eventually, after navigating at least three small canals, we worked our way back to the Grand Canal. As we proceeded south toward the terminal where our nautical excursion had begun, we passed a couple of 200-foot freight boats. Their crews waved to us and we waved back. I wondered whether they were used to seeing non-Chinese people. Soon the terminal with its green roof came into view, and five minutes later we docked. It had been a rewarding experience to travel upon a small portion of what was once a 1,080 mile, man-made waterway, that functioned as China's principle lifetime between its southern and northern regions. Furthermore, it was doing this hundreds of years before anyone in Europe, much less America, even thought of canals as an efficient and inexpensive method of transportation. A trip on the Grand Canal is definitely recommended for those who are interested in canals and inland navigation.

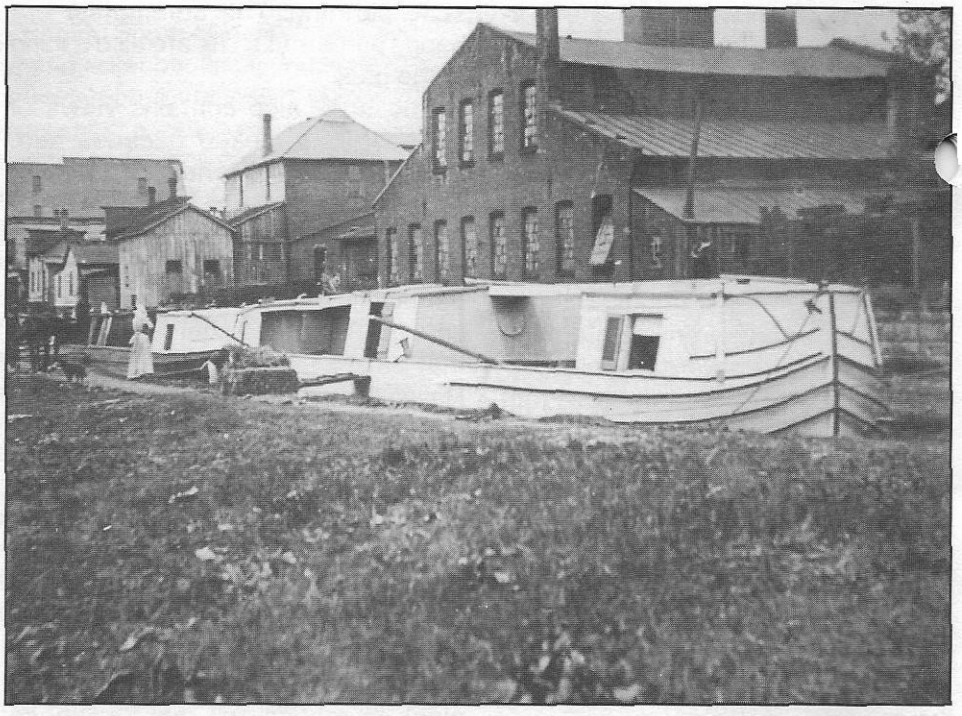


MASSILLON AND THE OHIO & ERIE CANAL

by Terry Woods

[A more comprehensive version of this material is to be published by the Massillon Museum under the title "The Ohio & Erie Canal in Stark County."

Photographs are from the author's archives.]



Ohio & Erie Canal in Massillon north of Walnut Street. About 1900.

No one was sleeping at one o'clock on a clear January morning in 1826 in the village of Kendal, Stark County, Ohio. James Duncan had just arrived from a meeting with canal commissioners in Akron the evening before with the wonderful news that the canal would be routed along the east side of the Tuscarawas River nearly the entire length of the county. The young men who had taken Duncan's side against William Henry's route along the western bank were dutifully celebrating.[1]

Kendal was a quiet village founded some 13 years before, in April of 1812, by Thomas Rotch. This village had been formed on the plains the Indians had burnt each spring to improve the hunting. It was bounded on the west by the Tuscarawas River and to the east and south by Sippo Creek, a fast moving stream with numerous mill sites. Duncan came four years later, liked the area and, fetching his French bride from Virginia, settled there and began making a name for himself. Duncan built or purchased a brick home on Front Street (present Wales Road), purchased a quarter section of land at the junction of the river and creek, and built one of the first grist mills in the area.[2]

The financial panic of 1822 caused the price of wheat to drop to 25 cents per bushel. Duncan built a distillery on Sippo Creek to transform bulky grain into more easily shipped whiskey. In 1822 he had a flatboat built, loaded it with flour, whiskey, potatoes and other produce and, on a March freshet, traveled down the Tuscarawas, the Muskingum, and the Ohio to Cincinnati. There he sold the cargo and boat and walked back to Kendal.[3]

Duncan had firsthand knowledge of the need for better access to outside markets. When the state passed a bill enabling two canals to be built, eventually linking the Ohio River and Lake Erie, Duncan leaped into action, lobbying heartily to get the canal routed through land he owned on the east side of the river. One of Duncan's lobbying tactics was to offer a third of the lots in a new town he proposed to build to the state, should the canal be routed down the east side of the river. Duncan platted his new town, Massillon, in December of 1826. His donation of town lots was accepted by the state, and Duncan promptly bought his gift back for $3,000.[4]

Duncan, in partnership with George Wallace, James W. Wallace, Julney Wallace, and Peter Bowan, contracted to build eight sections of the canal. They built the two miles above Massillon, "through the stone quarry," and the last mile and a half south of town, including Lock #5. Arran Chapman built the section south of the stone quarry and Jesse Rhodes and Horace Spencer built the section through Massillon itself.[5]

The Ohio & Erie Canal was opened from the Portage summit to the first lock below Massillon in August, 1828. A huge celebration was held. The first boats entering town were the *Allen Trimble* and the *State of Ohio.* They carried the canal commissioners and representative engineers. Tradition insists that the first cargo on the canal out of Massillon was a load of small machinery. Warehouses for the storage of grain had been built along the berm bank of the canal prior to its opening and they were immediately put to good use. H.B. and M.D. Wellman began offering "cash for wheat" in 1829 and Massillon soon became known as the "wheat capital of the west."

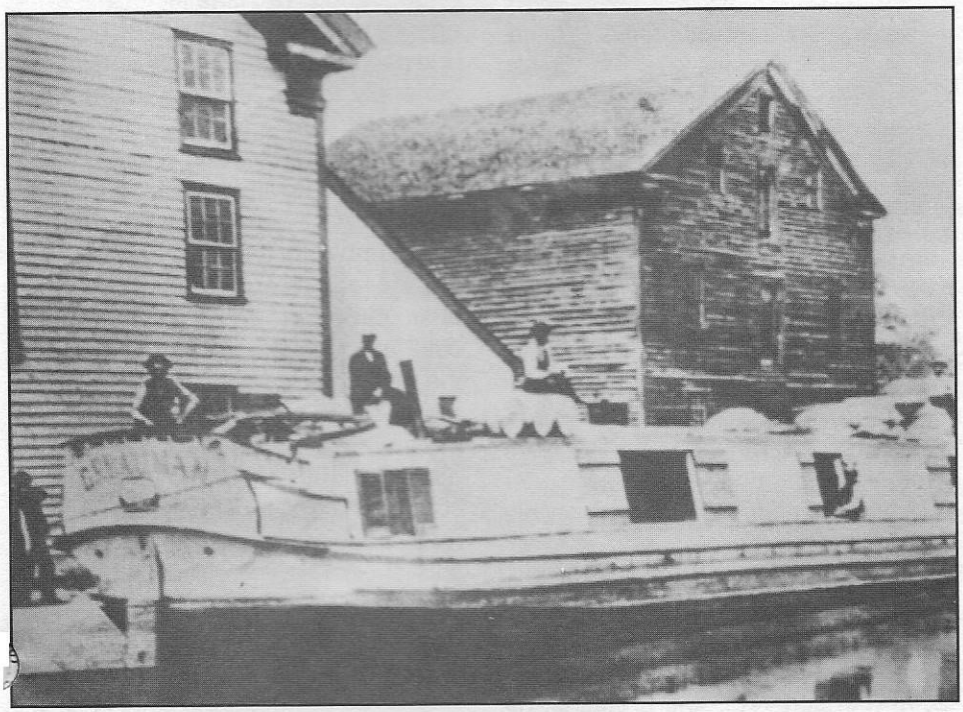
Massillon was incorporated as a village in 1838. That was also the peak year for the Massillon wheat trade. There were up to 14 warehouses erected along the canal solely to store wheat for transshipment. During the fall of the year after harvest, when the roads were passable, wagons would be lined up for miles on the major roads into town waiting to be unloaded. In addition to the Wellman warehouses, one was owned by L. & S. Rawson. The Rawsons were among the largest buyers of wheat in the state. They also ran a mercantile business in Massillon and operated a canal boat. Hogan & Harris were local agents for the Troy & Erie Line of canal boats, and did a large forwarding and commission business. There was one boatyard in Massillon, on the towpath side, a couple of hundred yards north of present Cherry Street. Joseph Lockwood formed the Lockwood Express, a packet boat service between Massillon and Cleveland, consisting of a number of craft fitted up for the fast passenger trade. At one time 28 canal boats registered Massillon as their home port. A toll collector's office was located in Massillon on the berm bank of the canal just above the Main

Street bridge. The first toll collector was William Fogle. When he died unexpectedly, James Duncan was named to that position.[6]

James Duncan formed a loose partnership with other influential Massillon businessmen and, in 1833, erected the Massillon Iron Furnace, a foundry, on the west bank of Sippo Creek just south of Main Street. A year later, the state granted the combine a very broad charter in the name of the Massillon Rolling Mill Company. This company was authorized to engage in almost any activity except banking. It was originally capitalized at $250,000, which was soon increased to $400,000. Duncan and the Massillon Rolling Mill Company became highly involved in real estate and initiated a number of grandiose schemes in the area. A brick headquarters for the company was built on the southwest corner of Tremont and Erie streets. The Tremont House, a magnificent hotel was constructed on the southeast corner. The Duncan Mill was expanded and turned into a woolen mill. A sawmill was also erected on Sippo Creek.[7]

The area south of present Tremont Street was initially low and swampy. The line of the canal curved off to the east around this swampy area, hugging the hillside, before coming closer to the river at a relatively narrow point in the river valley and descending 12 feet at Lock #5. James Duncan, when building that section, had tried to convince the state engineers to allow him to straighten the line. In 1838, Duncan, as president of the Massillon Rolling Mill Company, again approached the state with the same proposal. Whatever brand of persuasion Duncan was using that year, he was successful. The Massillon Rolling Mill Company spent $4,000 straightening the line of the canal. The state reduced the lift at Lock #5 to 6 feet and built a new lock of 6 feet lift 3/8ths of a mile to the north. This resulted in the unusual numbering of the locks in Massillon with the newer, upper lock, being called #5 and the reworked, lower lock, being Lock #5-A.[8]

Jesse Rhodes purchased the land adjacent to Lock #5 and built the Massillon Flouring Mill in 1841.[9] That same year Duncan and the Massillon Rolling Mill Company approached the state with a plan to build a dam on Sippo Creek some 5 miles above Massillon, flooding more than 1,000 acres that the company had purchased in 1836. The Rolling Mill Company proposed to sell water to the state for canal purposes, for power to local mills, and for drinking water to the local community. The state's engineers were extremely skeptical of the merits of Sippo Creek as a water source for the canal. A resolution in 1842 ruled against the Sippo Dam project.[10]



Two of the fourteen grain warehouses along the Ohio & Erie Canal in Massillon. 1845 photo.

A financial panic in 1838 had severely hurt the Massillon Rolling Mill Company. Another panic hit the country in 1841-42, and aggravated the already precarious stability of the company and, indeed, the entire country. The Sippo Creek foundry was closed in 1839 and the patterns sold.[11] Massillon negated it's charter in 1845. The Russell Works was built between the canal and south Erie Street in 1842 on land purchased from the Massillon Rolling Mill Company.[12]

Apparently Duncan had continued lobbying people at the state to agree to a canal feeder from Sippo Creek. A communication from the Ohio Board of Public Works, dated February of 1844, mentioned a potential need for additional water at this point and two plans to provide it. One was a dam across the Tuscarawas near the lower lock and a short feeder. The other was the old Sippo dam project. The board favored the Sippo dam, hinted at an imminent change in the ownership of the Sippo area land, and recommended a quick decision. On March 11, 1844 a contract was signed between James Duncan, President of the Massillon Rolling Mill Company, and Leander Ransom, for the Board of Public Works, authorizing the construction of the Sippo dam. The state agreed to pay the Rolling Mill Company $5,000 to construct the dam and reservoir. The agreement also stipulated that the reservoir/feeder system be capable of providing 500 cubic feet of water per minute at all times.[13]

In January 1847, the Board of Public Works was authorized to negate the Sippo feeder contract and to dispose of the reservoir. Duncan had been forced to give over control of the Rolling Mill Company to three eastern investors in 1844. He left Massillon for the Lake Superior iron region in 1846.[14] The Board of Public Works was still answering questions from the legislature in January of 1848 of whether the Sippo reservoir had ever been able to supply the required amount of water or was even the best method of supply that could be adopted. All these questions were made moot on February 22, 1848 when the Sippo dam was breached, apparently by disgruntled local citizens, causing a tremendous flood and great destruction of the canal, commerce and some local buildings. An estimate of the

All the lands of the old Massillon Rolling Mill that hadn't already been sold were reacquired from the eastern money men by local interests and, by 1848, were in the hands of Kent Jarvis, a Massillon enerepreneur.[16]

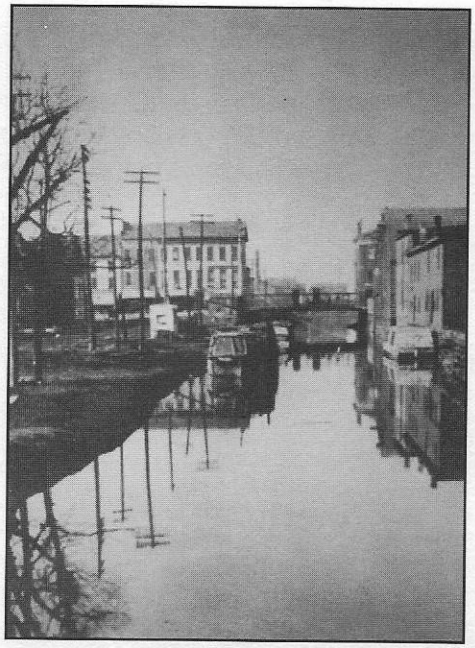
The railroad came to Massillon in March of 1852. Both Alliance and Canton experienced terrific land booms in the 15-year period immediately following the coming of the railroad. Massillon, with its business community tied to the canal, gained only 67 lots in that same period and experienced a number of business failures.[17]

The Massillon Furnace was established in 1853 by W.M. Wellman and others on land once owned by the Massillon Rolling Mill Company. It was quite successful at first, but later suffered financial reverses and failed. The site of that business was taken over by a bottle works in 1881. Massillon was again incorporated in 1853. Also in 1853, a second water works was established on Sippo Creek by H.B. Wellman. A much smaller dam, about a mile downstream from the 1844 one, was erected. It, too, supplied water for power via an extensive mill race. In 1856, the state again entered into an agreement to use Sippo Creek as a canal feeder.[18]

The Massillon Flouring Mill had apparently been directing its tailrace directly into the Tuscarawas River. In 1854, the state transferred a parcel of land to Jesse Rhodes to construct a tailrace that would allow water used by the mill to re-enter the canal at a point below the Massillon lower lock.[19]

The Volcano Furnace was begun in 1855 by H.B. Wellman just below the Massillon Furnace. It was hit by hard times and failed in 1857, but was reorganized and lasted into the 1880s.[20]

All the Ohio's state-owned canals were leased in 1861 for a ten-year period at $20,000 per year by a consortium of six Ohioans. Kent Jarvis was one of these men. Recent research indicates the "Group of Six" was actually a front for an ever-changing group of more than 50 men who had banded together to keep from having to bid against each other and raising the lease price. The lease was renewed on the same terms in 1871, but negated by the lessees in 1878. The state again took over operation of its canals in 1879.[21]



Ohio &Erie Canal in Massillon looking north along the "main basin." About 1900.

The Massillon Flouring Mill burned in 1866. In November of that year, the property was sold to a combination of eastern and local investors and the Massillon Paper Mill came into being.[22]

Coal was extensively exploited in Massillon during the middle and late nineteenth century. Massillon coal was known far and wide for its high heat and low smoke and sulfur content. A great number of the early Massillon mines were initially opened by the Massillon Rolling Mill Company.[23]

The last commercial boat on the canal in Stark County was the *Nailer,* George Myers, captain. The *Arvine* was a small steam excursion boat, owned and operated by George Hepert, that plied the canal in the last decades of the nineteenth century, taking picnic crowds on the canal to Canal Fulton or Zoar. Asha Cutler was known to take Sunday picnic excursions on his canal boat to a grove some four miles above Massillon. Asha Cutler and Canal Boat Annie lived on a grounded boat underneath the B. & O. trestle on the berm bank of the canal for some years after commercial traffic had ceased on the canal.[24]

Beginning in 1907 in this area, the state refurbished the canal by rebuilding or repairing all the locks and most of the water control devices along the canal with concrete, and dredging the channel to a minimum depth of 5 feet. Contracts were let in 1908 to repair locks #5 and #5-A. Then, in 1909, the state removed Lock #5-A entirely and the level of the canal was raised to a point below where Cemetery Run entered the canal (about a mile). A new lock (entirely of concrete), a concrete culvert to carry Cemetary Run under the canal, and 500 feet of concrete retaining wall were constructed.[24]

These were among the last improvements made on the canal, as no more appropriations were expended by the state after 1909. The canal, refurbishment incomplete, was now of interest only to people interested in fish or water power. A few picnic excursions left Massillon in old boats for groves north of the city, but no commercial traffic. The flood of 1913 put an end to even that.

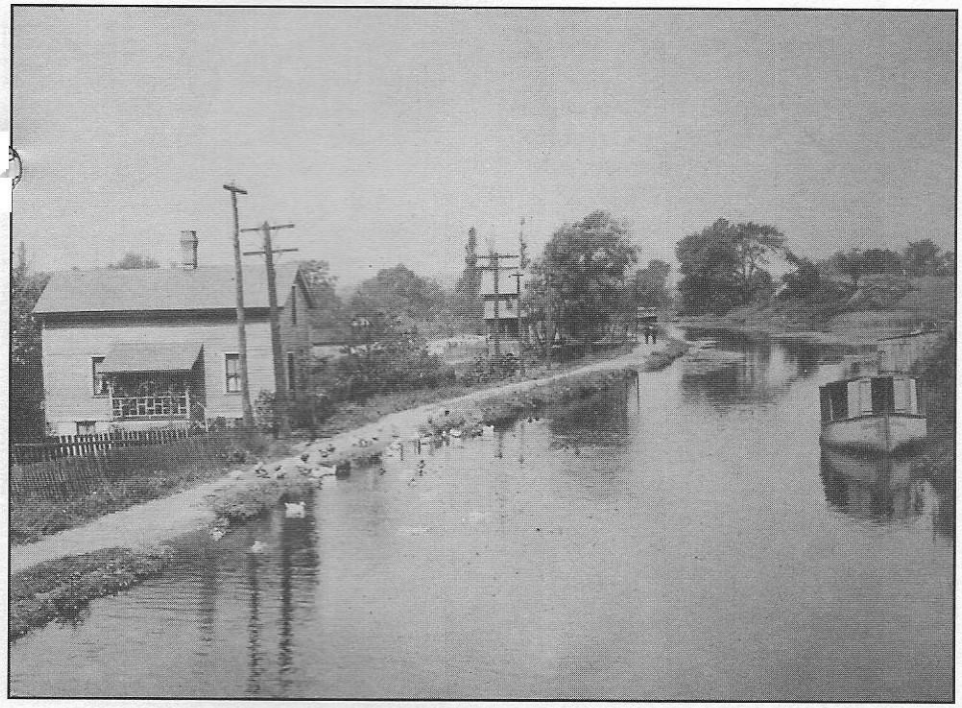
The canal from the feeder above Canal Fulton as far south as the mill at Navarre was slowly put back into shape by state forces for hydraulic purposes and it was used as such for a number of years. The city of Massillon paid a yearly rental of $3,000 to the state and a number of buildings were built over the canal with the first floor open to allow passage of water. The canal was officially abandoned by the state in 1929.[25]

The WPA put the canal back into good shape for park purposes from the feeder above Canal Fulton to a dam built across the canal just above Lake Avenue during 1937-39. There was no agency to administer the park, however, and people dumped in, squatted on, and generally took over the canal north of Massillon.

The city of Massillon purchased the canal within the city limits from the state in 1949. A sewer line demolished the new tumble to the new Lock #5-A in 1939. Dredging and straightening of the river through town beginning in 1940 covered the canal, lock, and culvert in the new Lock #5-A area. Lock #5 was covered with earth in the late 1940s.[26]

The Stark County Commissioners acquired all of the canal lands within the county, except for those sections already acquired by another political subdivision (like Massillon) in 1964. A sewer line laid in 1968 prior to extending new Route 21 ran into the concrete structure of new Lock #5-A. It was then necessary to demolish all but a trace of the lock and culvert.

The canal lands within the county



Ohio & Erie Canal entering Massillon from the north, above Lake Avenue. About 1900.

were transferred to the Stark Metropolitan Park District in 1989. The brick building that housed the Massillon Paper Mill was razed in 1992.

Cursory digging at the supposed site of Lock #5 in 1992 failed to locate any evidence of the lock. The theory now is that the foundation and lower portion of the lock were destroyed by heavy equipment when the area was leveled. The installation of a new Cemetery Run culvert under Route 21 in 1997 removed the last small bit of evidence of new Lock #5-A.[27]

There are practically no traces of the Ohio & Erie Canal today within the city limits of Massillon.

NOTES

1. Mrs. Barton E. Smith, *Upon These Hills* (Massillon, Ohio: 1962) p. 34. This source mentions the celebration beginning at 1:00 a.m., though it fails to mention the date. The third annual Canal Commissioners' Report (for the year 1826) mentions how numerous surveys were run the previous fall and winter before the decision was made to run the canal along the right bank. Since numerous sources mention the initial canal contracts being released on January 18, 1826, we have to assume the decision was made in December 1825 or early January 1826.
2. Obituary, James Duncan, Esq. Ohio Repository (Canton), March 1863, p. 2 (from a typed copy in the possession of the Massillon Museum).
3. William Henry Perrin (ed.), *History of Stark County Ohio* (Chicago, Baskin & Battery Historical Publications: 1881) p. 382. The mill dams at Zoar and New Philadelphia were passable only during times of highest water. Duncan never tried this effort again. Perrin states elsewhere that the Tuscarawas was never navigated as far north as this point after 1922.
4. Statement of D. Jarvis, Esq., and others to the Board of Public Works of Ohio, January 29, 1852, p. 1. The standard histories of Massillon often mention a figure as high as $6,000.
5. Copies of original contracts for the construction of the Ohio & Erie Canal south of the Portage summit, now stored at the Ohio Historical Society in Columbus.
6. Perrin, *op. cit.,* pp. 391-93; Joseph A. Sourini, *Massillon: Canal Town* (Massillon, Washington High School: June 1975). The boatyard is depicted in early maps of the town and mentioned in an advertisement for a canal boat built there in the *Ohio State Journal* and *Columbus Gazette,* May 1833.
7. Edward Thorton Heald, *The Stark County Story* (Canton, Ohio: Stark County Historical Society, 1949) pp. 141-42. Heald states that Duncan commenced his real estate deals as president of the Massillon Rolling Mill Company in June of 1835. From the deals attributed to him in Fenelon and Navarre in 1833 and 1834 we believe he got an earlier start. Heald also gives a figure of $600,000 for the maximum capitalization. Kent Jarvis, in "A Scrap of History," *The Massillon Weekly American,* Wednesday, January 27, 1875 (vol. 6, no. 1) (from a typed copy in the possession of the Massillon Museum), stated the figure was "around $400,000."
8. Jarvis, *op. cit.,* pp. 1-2. It describes Duncan's early efforts to have the canal line straightened and a bit about the Massillon Rolling Mill Company's activity. Frank Trevorrow, "The Ohio & Erie Canal at Massillon," *Towpaths,* vol. VII. no. 1 (1969), p. 9, summarizes these efforts and describes the lock numbering arrangement.
9. Typed copy of undated newspaper article in the "Paper Mill" folder at the Massillon Museum.
10. Trevorrow, *op. cit.*
11. Perrin, *op. cit.,* pp. 398-99.
12. Smith, *op. cit.,* pp. 45-46.
13. Unpublished correspondence dated February 3, 1844.
14. Obituary, *op. cit.*
15. Trevorrow, *op. cit.,* pp. 6-9. Trevorrow gives the loss at $50,000. Heald, quoting a diary entry by Arvine Wales, gives the value we use here.
16. "A Scrap of History," *The Massillon Weekly American,* Wednesday, January 27, 1875, vol. 6, no. 1. From a typed copy in the possession of the Massillon Museum.
17. Heald, *op. cit.,* pp. 405-08.
18. Smith, *op. cit.,* p. 53; State Document between Marshall D. Wellman and the State of Ohio concerning waters of Sippo Creek and right-of-way, September 20, 1856.
19. A letter from John Patten to Richard Howe, May 23, 1849, complains of the difficulty in regulating that level. State Document, State of Ohio & The Massillon Iron Company dated July 8, 1854, transfers a parcel of state land to Jessie Rhodes to construct a tailrace and re-enter the canal below the lower lock.
20. "A Scrap of History," *op. cit.*
21. "The Massillon Paper Mill Company," *The Massillon Weekly American,* Wednesday, January 27, 1875. From a typed copy in the possession of the Massillon Museum.
22. Perrin, *op. cit.,* pp. 402-03.
23. Sourini, *op. cit.;* interview with Albert Hise, former curator of the Massillon Museum by Terry Woods, March, 1975.
24. 1909 Board of Public Works Report.
25. Interview with Waldo Streby by Terry K. Woods, January and March 1990.
26. "Canal Land Purchase by City is Approved," *Massillon Independent,* June 23, 1949; City of Massillon Sewer Maps.
27. Personal memories of Terry Woods.

An Historical Slant

CANALS AND INLAND WATERWAYS IN BRITISH CRIME FICTION

by Philip L. Scowcroft

The latest instalment in this long-running survey takes us back a century and a quarter, almost as far as Colin Dexter's *The Wench is Dead,* set on the Oxford Canal in 1859, but investigated from the present day. *Dead Image* (Hale, 2000), by the appropriately named Joan Lock, is entirely historical in its ambience. In October 1874 a flotilla of narrow boats is travelling peaceably along the Regent's Canal (in London) when the calm is rudely shattered by a huge explosion which tears apart one of the boats. On investigation, four people are found to be dead. Only three are narrow boat crewmen; the fourth, a woman disfigured beyond recognition, has died not from the explosion but from stab wounds. Two policemen from Great Scotland Yard (no New Scotland Yard in those days) investigate; this is an attractive mystery, but still more attractive is the carefully delineated canal background.

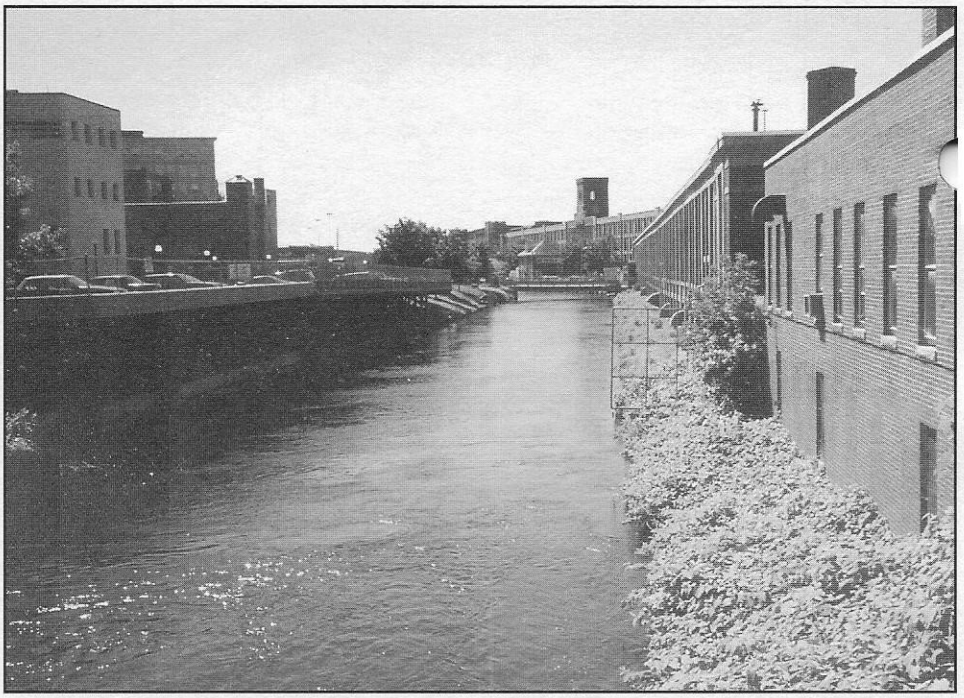
Maine-ly Canals

EXPLORING WATERWAYS IN THE PINE TREE STATE

by Linda J. Barth

Many readers might be surprised to learn that Maine has several man-made waterways. On the Canal Society of New Jersey's Eastern New England tour in 1991, we followed and studied Maine's C&O Canal – the Cumberland & Oxford. Extending from the logging regions into Portland, this unique waterway used three methods of propulsion: sail on Long Lake, poling through the Crooked River, and animal power in the dug section into Portland. More information about this canal can be found in "The Best from American Canals," Numbers, I, IV and V.

On a more recent trip, Bob and I had the fun of exploring two more Maine canals. I had received an old postcard showing the Lewiston Canal, so, of course, we had to find it. Near a new waterfront park along the Androscoggin River, we visited the offices of FP&L, which, surprisingly, stands for Florida Power & Light! Chris Shaw, the general manager, provided maps and showed us the mechanisms for opening the gates to allow water into the canal.



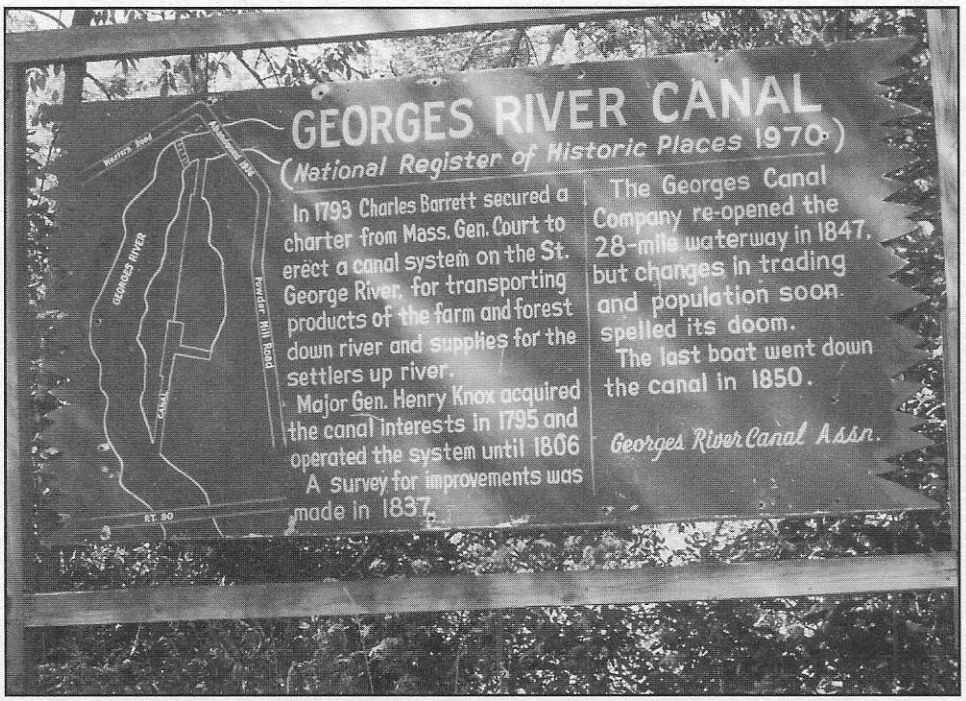
Lewiston Canal

The FP&L Energy Hydro System is located in four river basins in central and southern Maine: the Kennebec River, the Presumpscot River, the Saco River, and here at the Androscoggin. The Lewiston Canal system consists of an upper canal, a lower canal, and three cross canals, with a total length of about 8,200 feet. A total of 15 generating units are located in four separate stations. Total Nameplate Capacity is 7,894 KW. Operation is mostly at high flow periods. Because of infrequent use and the age and condition of the equipment, the units are exercised every two to four weeks for four hours, if possible, to prevent deterioration. FP&L Energy owns Bates Upper and Hill Mill on the Upper Canal and Androscoggins Lower and Continental Mill on the cross canals; the City of Lewiston operates three units at Androscoggin Upper Station.

The waterway continues for several blocks, with races drawing off water to serve adjacent factories and generating stations. Some 19th - and 20th-century buildings have been adaptively reused for shops and restaurants.

Leaving the Lewiston-Auburn area, we headed east toward the rocky coast of Maine. Near Warren, we stopped at Payson Park, along Route 90, to see a remnant of the Georges River Canal. A sturdy footbridge took us across the St. George River to an interpretive sign, erected by the Georges River Canal Association. It reads: "In 1793 Charles Barrett secured a charter...to erect a canal system on the St. George River, for transporting products of the farm and forest down river and supplies for the settlers up river." Barrett built locks, but then sold his interests to Major Gen. Henry Knox in 1795. The brochure of the Georges River Canal Association tells us that Knox's French engineer built the locks of wood *and sod.* The sods were scorched by the summer sun, so that when the water was let in, the locks were swept away and the labor of months disappeared in an hour. They were rebuilt with timber. Boats and cargo, both owned by Knox, used the canal until the general's death in 1806.

In 1846, the State Legislature authorized the Georges Canal Company to begin construction of the waterway from



tidewater in Warren to Liberty, and the 28-mile canal was reopened in 1847. In a departure from the usual canal practice, the Georges River Canal used no mules or horses on the towpath. Boats were poled in shallow water and used sail to cross the ponds.

The maintenance of the wooden locks and the frequent washouts caused by the flooding of the river required costly repairs which consumed the earnings from the tolls. The canal was never a financial success and the shifting of trade and population caused a decline in its traffic. The last boat navigated the canal in 1850, and six years later the State Legislature ruled that the Georges Canal Company had "no more right to improve or maintain the canal."

The waterway was neglected for over a hundred years until, in 1967, Merrill Payson, of Warren, cleared land where the lower locks had been located. Two years later the site was placed on the State of Maine Register and the National Register of Historic Places.

The Georges River Canal Association, begun in 1970, had three goals: preserving the canal site, developing scenic walkways, and promoting the historical significance and scenic beauty of the canal. Having achieved these goals as much as financially possible, the members agreed to dissolve the association in 1995. All historical data were turned over to the Warren Historical Society, where a permanent canal exhibit is on display.

At Payson Park, one can follow a narrow ditch which cuts off a bend in the river. There are also stone remains of a portion of the lock system. In addition to the iron footbridge, the park features benches, picnic tables, grills, and a children's gym, making it a lovely place for a summer's outing.

LETTER TO THE EDITOR

Dear Mr. Ross:

I am writing to clarify some of the information presented in the "President's Letter" of the Winter 2001 issue of *American Canals.*

In late 1996 Congress designated the Ohio and Erie Canal National Heritage Corridor in northeastern Ohio under the Omnibus Parks Bill. The intent of the legislation is to help local entities to protect and use historic, cultural, and recreational resources for community benefit, while raising regional and national awareness of their unique importance. The legislation prioritizes historical preservation while encouraging compatible educational, recreational and economic development activities. The enabling legislation, known as the Ohio & Erie Canal National Heritage Corridor Act of 1996, established the Ohio & Erie Canal Association (OECA) as well as the Ohio & Erie Canal National Heritage Corridor Committee, and mandated creation of an integrated Corridor Management Plan. Copies of the Management Plan are available in libraries throughout the four-county region, and from the OECA, 1556 Boston Mills Road, Peninsula, OH 44264.

The Plan recommends that the visitor experience be centered on journeys and loops, using a variety of transportation modes. These include a scenic railroad, the Canal, bike/hike trails, a Scenic Byway, and water transport, where possible. Each segment of the corridor will be designed to have a focus. In Stark County, a one-mile watered section of the canal is maintained, and a replica of a canal boat, the St. Helena III, operates May-September under the auspices of the Canal Fulton Heritage Society. Other visitor opportunities allow for enjoying the canal corridor via the Tuscarawas River or along a hike/bike/equestrian trail. Dry and watered sections of the canal prism serve as important wildlife habitat in an area that includes rural and urban landscapes. Trees felled during trail construction are removed whenever feasible, usually during the fall and winter when visitation decreases. However, preservation of forests along the canal is viewed as beneficial, not only to wildlife, but also to interpreting the history of Ohio and helping visitors to understand the challenges which canal builders faced as they opened the area for farming and commerce. The remnants of the Ohio & Erie Canal provide the backdrop upon which many historical, cultural, educational and recreational experiences will be enjoyed...just as the canal did for early settlers!

The arming of rangers is an issue under review by the Stark County Park District, which is responsible for 25 miles of the National Heritage Corridor, as well as six other parks encompassing more than 3,000 acres. Protecting the public's investment and assuring safe visitation is of paramount importance. The Corridor is 110 miles, and intersects four counties–Cuyahoga, Summit, Stark and Tuscarawas. The National Heritage Corridor in Cuyahoga and Summit Counties already is protected by armed rangers from their respective park districts, as well as by armed rangers of the Cuyahoga Valley National Park. Tuscarawas County does not have a park district nor rangers; however, its rural canal lands are protected by armed sheriff's deputies when the need arises. In short, protection of the Ohio & Erie Canal Corridor by armed police officers known as rangers is the norm, not the exception. They undergo the same training as municipal police officers and sheriff's deputies. A dramatic increase in the number of parks under the jurisdiction of the Stark County Park District and a dramatic increase of visitors to the Ohio & Erie Canal have contributed to the reassessment currently underway.

Thanks very much for your long-term commitment to promoting America's canals. It is through the efforts of dedicated individuals such as yourself that our Ohio & Erie Canal National Heritage Corridor is becoming a reality.

Sincerely,
Robert A. Fonte
Director/Project Manager
Stark County Park District

BOOK REVIEW

Carl and Alan Seaburg and Thomas Dahill, *The Incredible Ditch: A Bicentennial History of the Middlesex Canal* (Medford, Massachusetts: Anne Miniver Press, Medford Historical Society, 2000).

Reviewed by Linda Barth

One of the earliest canals built in the United States, the Middlesex Canal (1803 - 1853) in Massachusetts connected Boston with Lowell to provide a transportation route for lumber from New Hampshire.

The Incredible Ditch uses a unique blend of contemporary narratives, fictional accounts, old survey maps, and recent aerial photographs to create a fascinating look at this historic waterway. Beginning with a list of over 200 "Workers Who Built the Middlesex Canal," the authors use an amalgam of three accounts of a July 18, 1817 trip to take the reader on a ride from Charlestown to Woburn.

"How the Canal Was Born" is the memoir of Judge James Sullivan, President of the Canal Corporation. In "Diary of a Dig," Loammi Baldwin, the canal's first superintendent, describes the arduous process of construction, from the 1793 surveys through the last year of the dig (1803) and the opening of a branch canal in 1805. The avid canaller will enjoy descriptions of the little-known bypass canals along the upper Merrimack. "How the Canal Worked" is drawn from Agent Caleb Eddy's 1835 report, supplemented by general information from standard works.

"Overview" consists of a series of delicately-drawn maps showing the canal as it passes through the varied topography of northeastern Massachusetts. The aerial photographs taken by Nolan Jones are

used in "Overflight"; the canal is superimposed upon these views of its route through a much-changed modern landscape.

"Closing Down the Canal" is based on Agent Richard Frothingham's report, and "A Canal Scrapbook" contains excerpts from canal-era authors such as Henry David Thoreau and the New York State Canal Commission, as well as from modern publications.

The book concludes with "Afterglow," which describes the canal after its abandonment, and a final chapter detailing the preservation work done by the Middlesex Canal Association, the Woburn Canal Society, and the Middlesex Canal Commission,

Lovely paintings of locks, bridges, aqueducts, vessels and life along the canal are interspersed with photographs both historic and modern. You can even learn a canal song, "Haulin' Down to Boston On the Middlesex Canal," written by David Dettinger.

The Incredible Ditch can be purchased from the publisher, or from the Middlesex Canal Association, c/o Osterberg, 79 Nichols St., Wilmington, MA 01887-1625.

SAVE THE DATE!

A.C.S. annual meetings for 2001 will be on Friday, the 26th of October, at the Plaza Hotel in Hagerstown, Maryland. Directors meeting–3:00 p.m.; membership meeting–4:30-5:30 p.m. Plan to stay for the Pennsylvania Canal Society tour of the C & O Canal on Saturday, with additional optional activities on Sunday.

For hotel reservations, contact the Plaza Hotel, 1718 Underpass Way, Hagerstown MD 21740, by October 5th, for special rates of $62 single or $70 double, plus tax.

For information and registration for the C & O tour and related activities, contact Dave Johnson, 9211 Wadsworth Drive, Bethesda MD 20817.

GOOD NEWS

Last September, the D&H Canal Historical Society and the Marbletown Business Association sponsored the third Canawer's Day and $10,000 raffle. The two events raised $66,000 for preservation of the Five Locks Walk, a National Historic Landmark.

Members of the Middlesex Canal Association selected the annual September event, Yankee Doodle Day, to spotlight their work restoring a historic mill in Billerica, Mass. Here is Thomas Dahill's description in *Towpath Topics*. "The brick walls were sand-blasted, rough floors leveled and surfaced mirror-bright, extensive wiring installed, and exhibit panels constructed and painted, caulked and erected for a show of illustrations of *The Incredible Ditch* . . . Models of a lock, canal boat and aqueduct increased the reality of the canal." Buses brought a steady flow of visitors.

There's good news and pretty good news concerning aqueducts. The long efforts of the Uphold the Monocacy Aqueduct, a committee of the C&O Canal Association are paying off. Last February, NPS personnel performed coring and drilling tests of the aqueduct as part of planning and design work to develop a preservation strategy. Congressional funding is expected in fiscal year 2002 to begin restoration of the aqueduct.

David Beebe, director of the Camillus Canal Society in New York, reports that members are waiting for final word about the balance of funding needed to restore the Nine Mile Creek Aqueduct, making it the only restored navigable aqueduct in New York State. Volunteers have spent five years repositioning limestone blocks, removing tree growth, pressure washing the joints and repointing the piers.

The Virginia Canals and Navigations Society has just published the Upper James Atlas, the latest in the society's series of historic Virginia river atlases. It was edited by former ACS president, Bill Trout. Special sections include the history of batteau navigation, an automobile tour of the canal, and the canal's unique Unfinished Division. The atlas is $20 by mail. Write c/o R.A. Davis, VC&NS Sales, 4066 Turnpike Road, Lexington, VA 24450.

In March, the parks department of New Haven, Indiana, broke ground for a city park called Canal Landing. The park will be on the south side of the Wabash & Erie Canal bed on Broadway between Main and Bell Ave. A swing bridge over the canal was once located in the center of the block.

Bob and Linda Barth, a joint driving force behind the Canal Society of New Jersey's wonderful trip program, are bringing their expertise to a larger audience. They have formed Canal Tours & More to offer tours of canals, transportation, industrial and historic sites. Check out the web site at www.CanalTrips.com or phone 908-722-7428.

The Canal Corporation of New York presented Dave and Liz Beebe with the Spirit of the Canal Award for their 28 years of dedication to the canal. They accepted the award for all the volunteers at the Camillus Erie Canal Park.

In the future, I'll try to include web site in addresses. In the meantime, I'd be happy to receive web sites of canal societies or other organizations and will list them in the next issue. Write me at kmulligan@gis.net.

-Kate Mulligan

In Memoriam

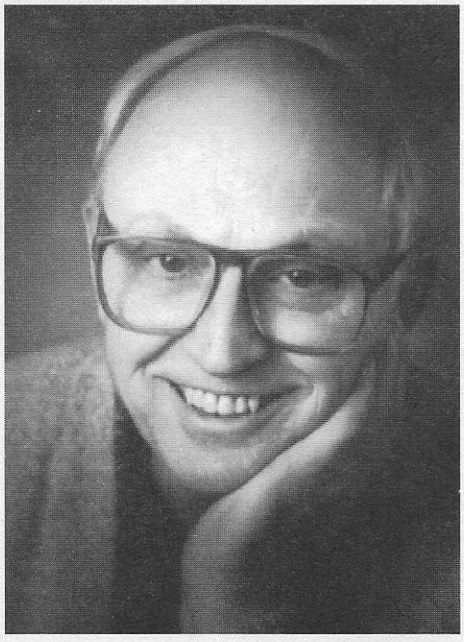
RONALD E. SHAW

1923 - 2001

The canal history community lost one of its most eloquent spokesmen on April 4, 2001 when Ronald E. Shaw of Oxford, Ohio died.

Dr. Shaw produced two outstanding reference volumes on American canal history. The first, published in 1965, was *Erie Water West*. That writing won the Frederick Jackson Turner Award from The Organization of American History. His second book, *Canals for a Nation*, was published in 1990 and offered an overview of the canal era in the United States. It is regarded by many as the most concise and informative book available on the subject. It was published by the University of Kentucky Press and is still in print.

Dr. Shaw was born in Eden, New York, not far from the route of the Erie Canal. He hiked and canoed along many miles of the barge canal and explored the remains of the original and enlarged Erie canals, as far as was possible.



He served in the U.S. Army in the Pacific during all of World War II. He attended Carlton College in Minnesota and the University of Rochester (in New York), where he received his doctorate in 1954. Dr. Shaw began teaching at Miami University (in Ohio) later that year and remained active in their History Department until 1993.

Ron Shaw was a long-time member of the American Canal Society and many of its members and officers count themselves fortunate to have known him. His most recent task as a canal historian was as a panel member at the 2000 World Canals Conference in Rochester, New York.

Ron was well regarded as an effective teacher, whose kind and patient manner made him a favorite with the student body at Miami University. He is survived by his wife, Judy, and their three children, Brian, Philip and Susan.

[Note: Much of the above information on Dr. Shaw was supplied by John H. White, who began as a student of Shaw's at Miami University and went on to distinguish himself in the field of transportation at the Smithsonian Institution before returning to live in Oxford.]

-Terry K. Woods