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UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

The National Survey of Historic Sites and Buildings

Special Report

Delaware and Hudson Canal,
Pennsylvania and New York

XVIII: Travel and Communication

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Delaware and Hudson Canal

Statement of Significance

Completed in 1828, the Delaware and Hudson Canal was the main waterway from the anthracite coal fields of northeastern Pennsylvania to the industrial and domestic furnaces of New York. Stretching 108 miles from Honesdale, Pennsylvania, to Kingston, New York, the canal proved to be enormously profitable during the middle years of the 19th century. During the 1860's when anthracite was the main source of power and the chief fuel for the industrial system of the United States, northeastern Pennsylvania produced from 40 to 50 percent of the entire supply, and the Delaware and Hudson Canal carried the greater share of it to tidewater. The growth of railroads led to the demise of the canal in 1899. Especially noteworthy remains of the canal are the Company Office at Honesdale, Pennsylvania, the Roebling Aqueduct (now a vehicular bridge) between Minisink Ford, New York, and Lackawaxen, Pennsylvania, the basin and canal bed at Cuddebackville, New York, a 5,000-foot section at Alliger-ville, New York, and Locks 15 through 20 at High Falls, New York.

History

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The Delaware and Hudson Canal was one of three waterways built in the 1820's to make the anthracite coal of eastern Pennsylvania marketable in New York. As the new Nation grew in population and began to develop industrially, the demand for sources of heat, light, and power increased. By the third decade of the 19th century, wood had become very expensive. The only deposits of soft coal then known were near Richmond and Pittsburgh. The first was small and the second inaccessible. The existence of anthracite beds in Pennsylvania was a matter of common knowledge, but few realized the value of hard coal as fuel. One who did was William Hurts, a Philadelphia merchant.

Hurts owned coal fields in the Pennsylvania mountains around Carbondale. Quantities of the fuel were mined and shipped to Philadelphia by wagon and barge, but the returns were marginal: transportation costs were high and there were competing fields closer to the city. Hurts decided what he needed was a canal that would make it feasible for him to ship his coal to New York City and what promised to be a seller's market. The route he envisioned was from Honesdale, Pennsylvania, down the Lackawaxen River to the Delaware, then along the Delaware to the boundary of New York State, and then up the Neversink River and across flat country to Roundout Creek. From there it was a short distance to Kingston and the Hudson River. The distance from Honesdale to Kingston by this route was 108 miles.

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Early in 1823 Wurts and his brothers organized the Lackawaxen Coal Mine and Navigation Company to realize the dream. From the Pennsylvania legislature they obtained the right to improve the navigability of the Lackawaxen and to collect tolls to finance the work. In the event that a separate facility was needed to parallel the river, which proved to be the case, they also obtained permission to construct a waterway. In New York the brothers were able to interest a number of businessmen in the venture. In April a group of New York financiers led by Philip Hone formed the Delaware and Hudson Canal Company, and the New York legislature authorized incorporation. Stock for the company sold in half a day. Original capitalization was \$500,000, but the estimate proved much too low, and in 1824 the company increased its capital stock to \$1,500,000.

Philip Hone became the first president of the company, and it was he who broke ground for the canal from Kingston to the Delaware River on July 13, 1825. Work progressed rapidly, and by September, 1827, it was ready for business. In the beginning the company had difficulty maintaining the water level at 4 feet, but if conditions were not optimal, they were not prohibitive, and barges found little difficulty in making the journey.

In 1827 the Delaware and Hudson Canal Company bought the charter of the Lackawaxen Company and a share in the Wurts mine for \$40,000.

After obtaining a loan of \$800,000 from the New York legislature and the privilege of borrowing up to \$300,000 elsewhere, the company was

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able to finance completion of the canal to Honesdale, Pennsylvania in the fall of 1828. The first ship to travel the length of the canal was the Orange, which left Kingston on October 28. The finished canal was 28 feet wide at the top, 20 feet wide at the bottom, and 4 feet deep. There were 110 locks in 108 miles, which overcame a total grade of 1,075 feet.

To get the coal from Carbondale to the docks at Honesdale, the company constructed a gravity railroad some 17 miles in length. At one point it descended over 500 feet in one mile. To prevent cars from going too fast in the descent, engineers equipped them with rear propellers. Connected to the gearing, they revolved so as to exert a backward pull and reduced the rate of speed to four miles an hour. Until workmen completed the railroad in 1829, wagons carried the coal down the mountains.

In the summer of 1829 the gravity railroad was the scene of the first experiment in America with a steam locomotive on a permanent track. The company wanted to find an inexpensive means of returning coal cars from the docks to the mines--mules were slow and their services costly--and decided to give one of the new-fangled contraptions a chance to prove its worth. The engine chosen for the test was the "Stourbridge Lion," a locomotive made in England. On August 8, the company engineer bravely drove the "Lion" over trestles that trembled under its weight. Although the trip ended successfully, company

officials thought the engine too heavy for its roadbed and abandoned the idea on grounds of safety. The achievement of the "Lion" apparently had little effect on American railroading: it influenced practically no one and preceded more meaningful and widely-publicized experiments in other localities by only a short time.

During the 1830's the company struggled to stay solvent. Strikes, depressions, and cholera epidemics made things difficult. But perhaps more basic in the long run was the fact that the canal was not operating as planned. Its capacity had been estimated at 540 tons per day or 180,000 tons in a year of 200 working days, but in the beginning it carried only 43,000 tons. Improvements gradually enabled the canal to realize its potential, and in 1841 the company managed to ship 148,000 tons of coal to Kingston and beyond. During the 1840's workmen deepened the canal on three different occasions so that by the end of the decade it had reached a depth of 6 feet. In 1851 the company enlarged the locks from 79 feet by 9 feet to 100 feet by 15 feet. The surface and bottom widths of the canal changed little over the years. The company also improved the gravity railroad. One major alteration occurred between 1841 and 1843, when the company relocated the track on the east side of the mountain.

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Prosperity finally came in the 1840's, and it was worth waiting for: the profits were enormous. Although its capital had doubled by this time, the company still earned from 10 to 20 percent net per annum. In 1864 the company raised its capital stock to \$10,000,000, and even this amount earned 31 percent the following year. Part of the reason for this prosperity was due to the acceptance of anthracite coal as an excellent fuel for domestic, commercial, and industrial uses. Naturally the enlarged capacity of the canal permitted the company to bring more coal to its buyers. A contributing factor was the Pennsylvania Coal Company, which began to use the canal in the 1850's.

After the 1860's, however, the company began to decline. The increasing use of bituminous coal by industry meant fewer profits. But, most of all, a better means of transportation had been developed. The railroad was faster, and it was cheaper. For a time the company rallied by buying railroads to supplement the canal and reach wider markets. In 1872 the canal carried its peak load of 2,930,333 tons of coal down to tidewater. After that year, however, its tonnage steadily declined as railroads proliferated. In 1899 it was over. The company dropped the word "Canal" from its name and ceased to operate the waterway and the gravity railroad.

Condition

There are many traces of the Delaware and Hudson Canal left between Kingston, New York, and Honesdale, Pennsylvania. However, five sections of the canal appear to be especially well preserved and to best illustrate its history. They are:

Locks at High Falls, New York

Location: Beginning at a point 50 feet directly above the northeast corner of the north end of the old Roebling aqueduct abutment located north of Route 213 in the center of High Falls, Ulster County, New York, the boundary proceeds in a westerly direction for 100 feet, then turns south at a right angle to parallel the aqueduct at a distance of 50 feet. The boundary continues to parallel the canal until it reaches the DePuy Tavern, where it moves westward enough to pass at a distance of 50 feet the west side of the structure and then returns to a point 50 feet from the west bank of the canal. The boundary then continues in a southerly direction past Locks 16, 17, 18, 19, and 20. The boundary then turns at a right angle to parallel the south end of Lock 20 until it passes 50 feet beyond the southeast corner of Lock 20. At that point the boundary turns at a right angle and proceeds in a northerly direction at a point 50 feet east of the canal bed and Locks 20, 19, 18, 17, 16, and 15 to the point of beginning.

Ownership: Various public and private. Locks 15, 16, 17, 18, 19, and 20 are leased from the High Falls Fire Department by the Delaware and Hudson Canal Historical Society, High Falls, New York. Mrs. Daniel Smiley, Mohonk Mountain House, New Paltz, New York, is the Preservation Committee Chairman.

Some of the best preserved locks remaining on the Delaware and Hudson Canal are Locks 15 through 20 located in High Falls, New York. Built in 1852, the locks are precision cut and fitted. Other important remains in the area are the abutment of an aqueduct built in 1849 by John A. Roebling, and the DePuy Hostelry built in 1797. The Delaware and

Hudson Canal Historical Society has leased the locks from the High Falls Fire Department. The Society would like to acquire the DePuy Hostelry for a museum.

Alligerville Section, New York

Location: Alligerville, Ulster County, New York. The eastern boundary is the eastern bank of the Peterskill. The northern boundary is Roundout Creek. The southern boundary begins at a point on the eastern bank of the Peterskill 50 feet south of the most southerly shore of Peter Davis Basin. After the boundary passes 50 feet west of the most westerly shore of Peter Davis Basin, it angles in a northwesterly direction until it reaches a point 50 feet from the nearest bank of the canal and continues to parallel the canal at a distance of 50 feet until it intersects the western boundary. The western boundary is a line running due south from Roundout Creek to the southern boundary at a point two miles down the middle of the canal from the eastern bank of the Peterskill.

Ownership: Public and private

Running west from Alligerville is a two mile section of the Delaware and Hudson Canal that is relatively undisturbed. The first 5,000-foot section contains water. Only one other section (at Cuddebackville) is water-filled. The towpath on the north bank makes an excellent hiking trail. The section is heavily wooded. The other major feature of the Alligerville district is the Peter Davis Basin. Designed to permit canal boats to change directions, the basin also contains water.

Cuddebackville Section, New York

Location: Cuddebackville, Orange County, New York. The northern boundary of the district is a line running west from U. S. Highway 209 at a distance of .3 of a mile north and exactly parallel to the center of the Oakland Valley Road until it reaches a distance of .2 of a mile from the point of beginning. Then it runs due south to the Oakland Valley

nishap. Further resistance came from raftsmen who were quick to bring suit in case of accident. To remedy the situation, company managers in 1846 authorized the construction of an aqueduct that would carry the canal and its passengers across the Delaware in elevated style. The firm accepted the plans of John A. Roebling for a wire suspension aqueduct on January 6, 1847.

Roebling finished the aqueduct before the end of 1848. Three masonry piers supported two $8\frac{1}{2}$ inch cables. From these cables--using wire rope hangers for the first time--the canal trunk was suspended with a planked towpath on each side. In his book Coal Boats to Tidewater, Manville Wakefield described the completed structure:

The aqueduct contained nearly eight thousand cubic yards of hydraulic cement masonry in its abutments and piers and with the extensions covered a distance of six hundred feet. Consisting of four spans, the width of its trunk at the water line was nineteen feet with a water depth of six feet. The diameter of its wire cable measure out to eight and one-half inches. The maximum strength of each cable was nineteen hundred tons with the total weight of cables and anchor chains placed at four hundred and ninety thousand pounds.

After the abandonment of the canal in 1898, the aqueduct became a bridge. The conversion necessitated the removal of the canal box, so that today only the piers and the cables date from 1848. The bridge remains in good condition. In continuous use by vehicular traffic since 1898, it is now a privately owned toll bridge.

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Office of the D & H Canal, Pennsylvania

Location: 1810 Main Street, Honesdale, Wayne County, Pennsylvania

Ownership: Leased by Wayne County Historical Society, 1810 Main Street,
P.O. Box 446, Honesdale, Pennsylvania 18431. Mr. J. Fletcher
Hurst, President.

The Office of the Delaware and Hudson Canal Company in Honesdale, Pennsylvania, remains in good condition. Practically unchanged since 1898 when the company abandoned the building and leased it to the Wayne County Historical Society, the one-story brick structure has served as a county museum for 70 years.

About 2,000 people visited the museum in 1967. It is open 4 days of the week from October to May and every day during the summer months. An admission of 25¢ for adults is charged.

The Office stands on Main Street in downtown Honesdale.

References: Manville B. Wakefield, Coal Boats to Tidewater: The Story of the Delaware & Hudson Canal (South Fallsburg, New York, 1965); David B. Steinman, The Builders of the Bridge: The Story of John Roebling and His Son (New York, 1945); Pennsylvania Writers Project, Pennsylvania - A Guide to the Keystone State (University of Pennsylvania, 1940); New York Writers Project, New York - A Guide to the Empire State (New York, 1940); Seymour Dunbar, A History of Travel in America, (New York, 1937); Edward Chase Kirkland, A History of American Economic Life, (New York, 1939); Lance E. Davis, Jonathan R. T. Hughes, and Duncan M. MacDugall, American Economic History (Homewood, Illinois, 1965); Noble E. Whitford, Supplement to the Annual Report of the State Engineer and Surveyor of the State of New York for the Fiscal Year Ending September 30, 1905, (Albany, 1906); Alvin T. Harlow, Old Towpaths (New York, 1926); Dorothy Hulburt, Carrying Coals to Rondout (Ellenville, New York, 1965); Interview with Don Ross, former President of the Delaware and Hudson Canal Historical Society, High Falls, New York, July 11, 1968; Interview with Mrs. Carol Crosly, Secretary of the Wayne County Historical Society, Honesdale, Pennsylvania, July 11, 1968.

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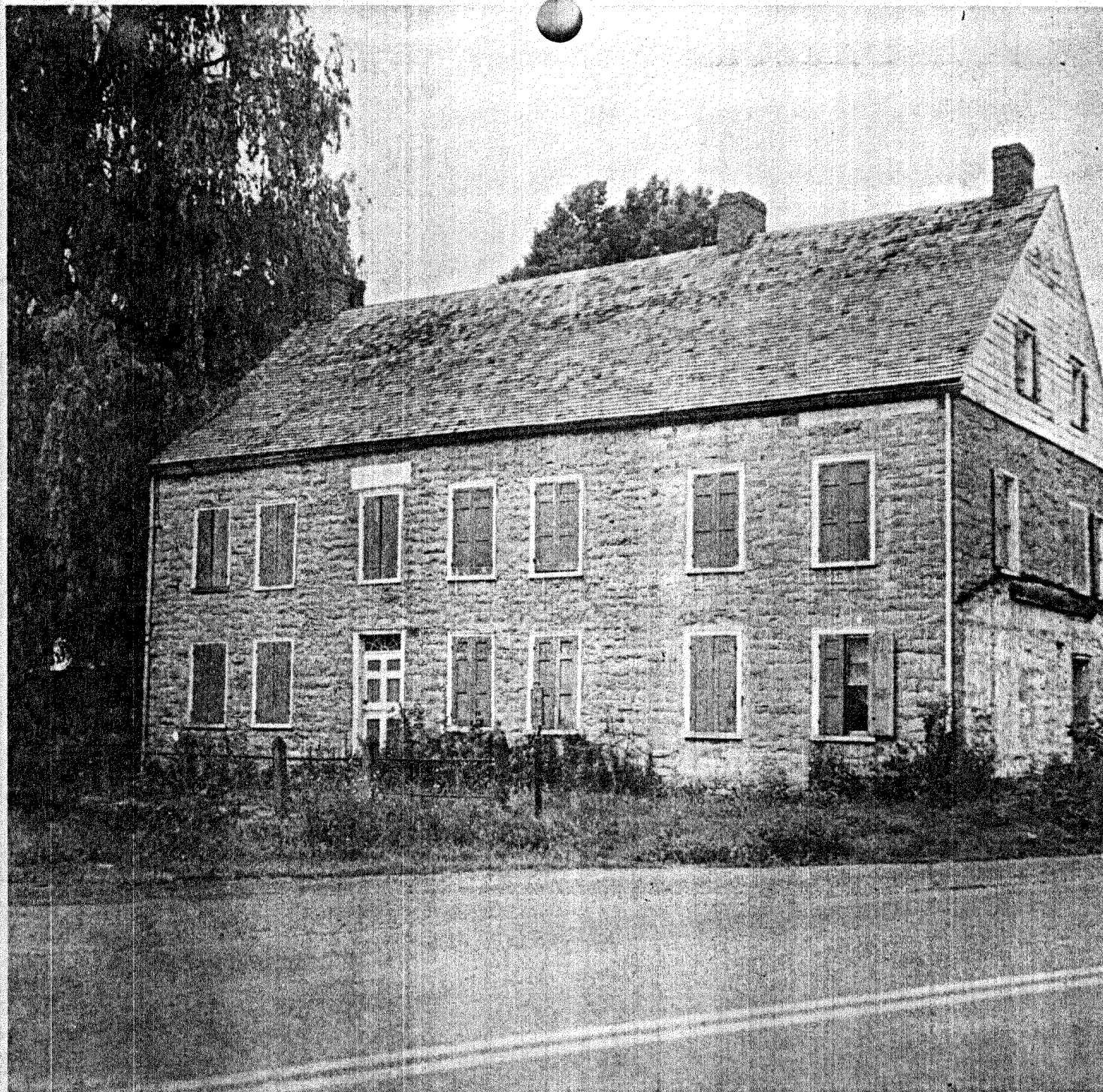
Delaware and Hudson Canal, New York and Pennsylvania

Completed in 1828, the Delaware and Hudson Canal was the main waterway from anthracite coal fields of northeastern Pennsylvania to the industrial and domestic furnaces of New York. Stretching 108 miles from Honesdale, Pennsylvania, to Kingston, New York, the canal proved to be enormously profitable during the middle years of the 19th century. During the 1860's when anthracite was the main source of power and the chief fuel for the industrial system of the United States, northeastern Pennsylvania produced from 40 to 50 percent of the entire supply and the Delaware and Hudson Canal carried the greater share of it to tide-water. The growth of railroads led to the demise of the canal in 1899. Especially noteworthy remains of the canal are the Company Office at Honesdale, Pennsylvania; the Roebling Aqueduct (now a vehicular bridge) between Minisink Ford, New York; and Lackawaxen, Pennsylvania, the basin and canal bed at Cuddebackville, New York; a 5,000-foot section at Alligerville, New York; and Locks 15 through 20 at High Falls, New York.

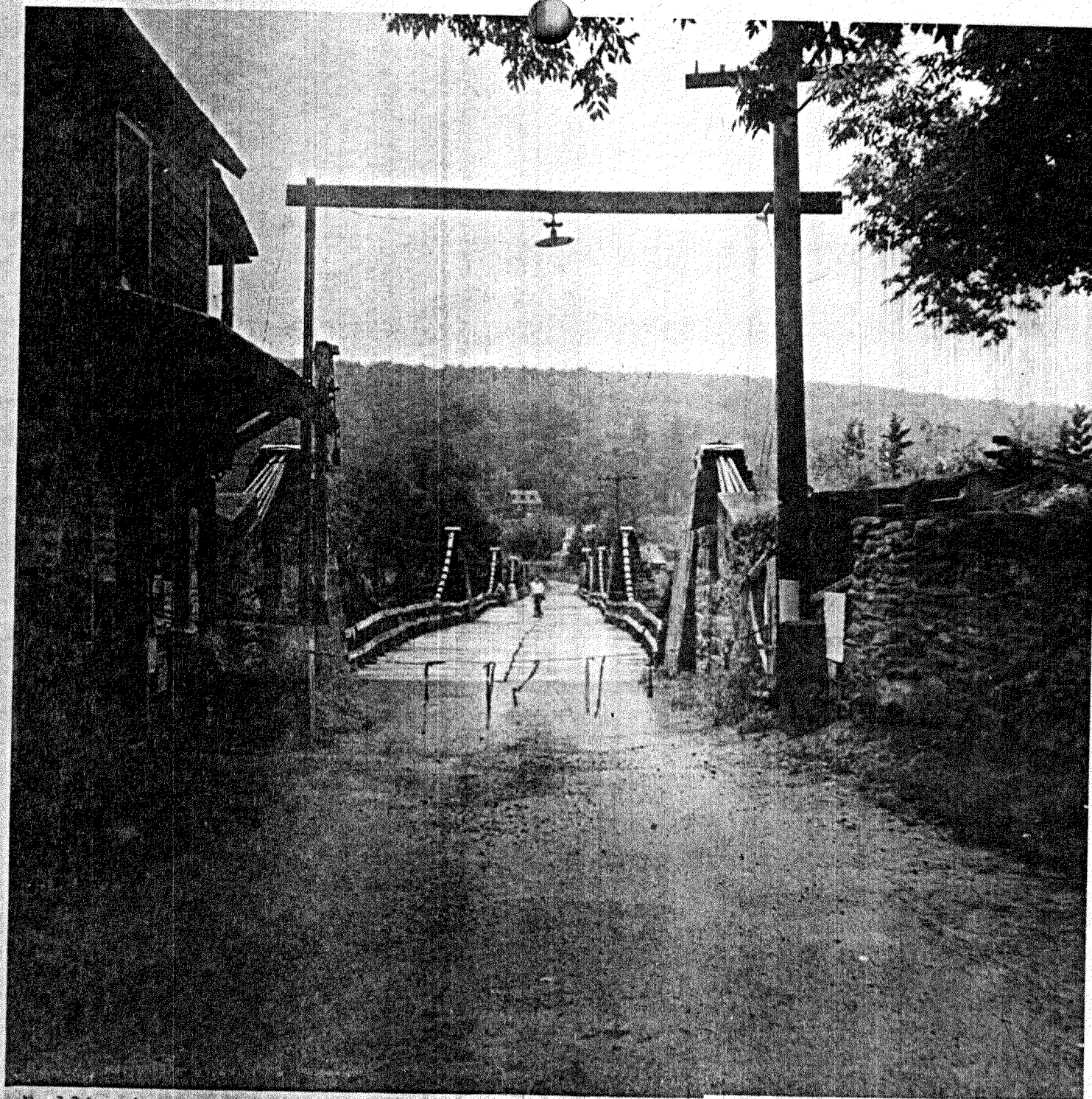
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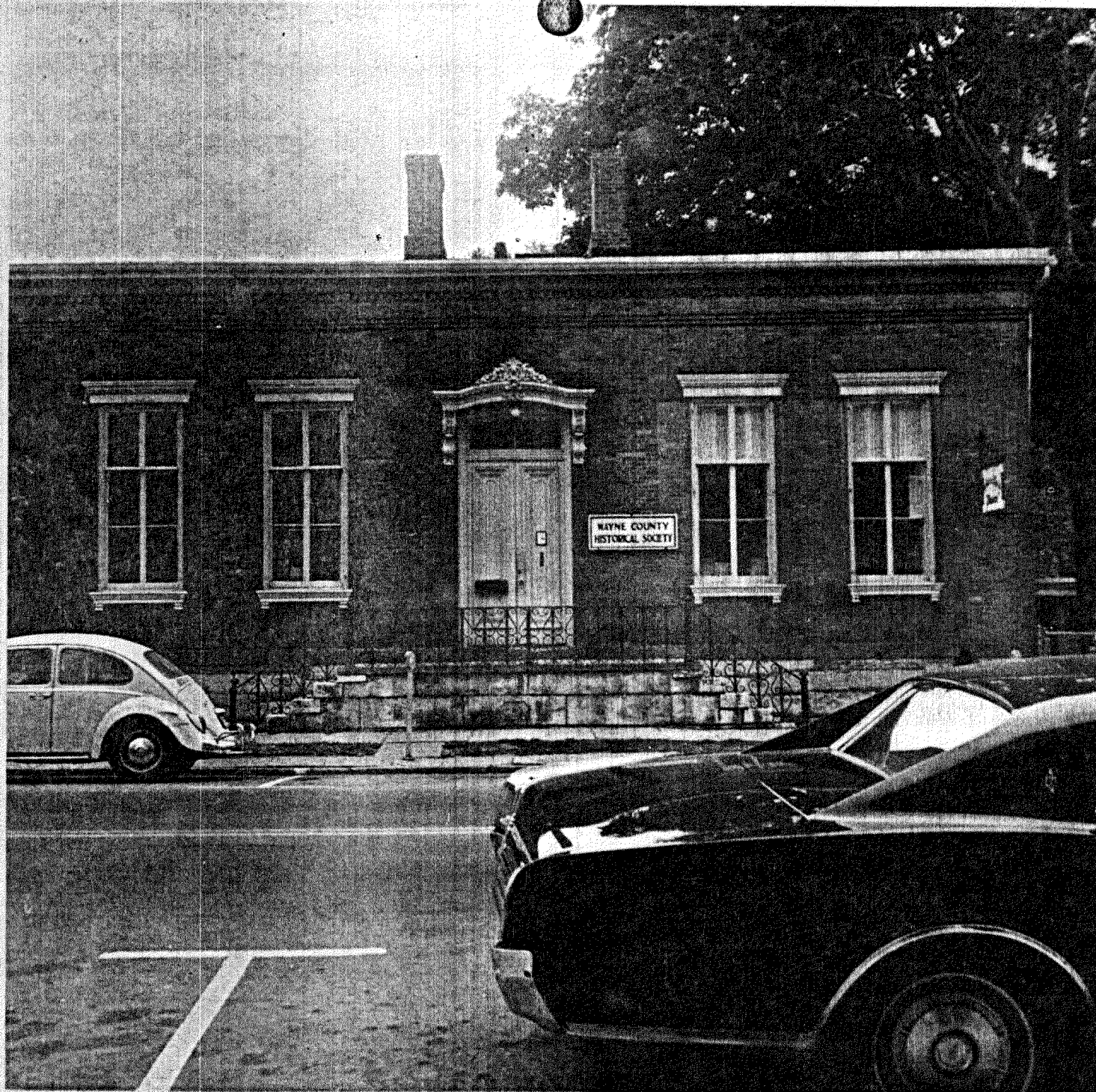
Roebling Aqueduct



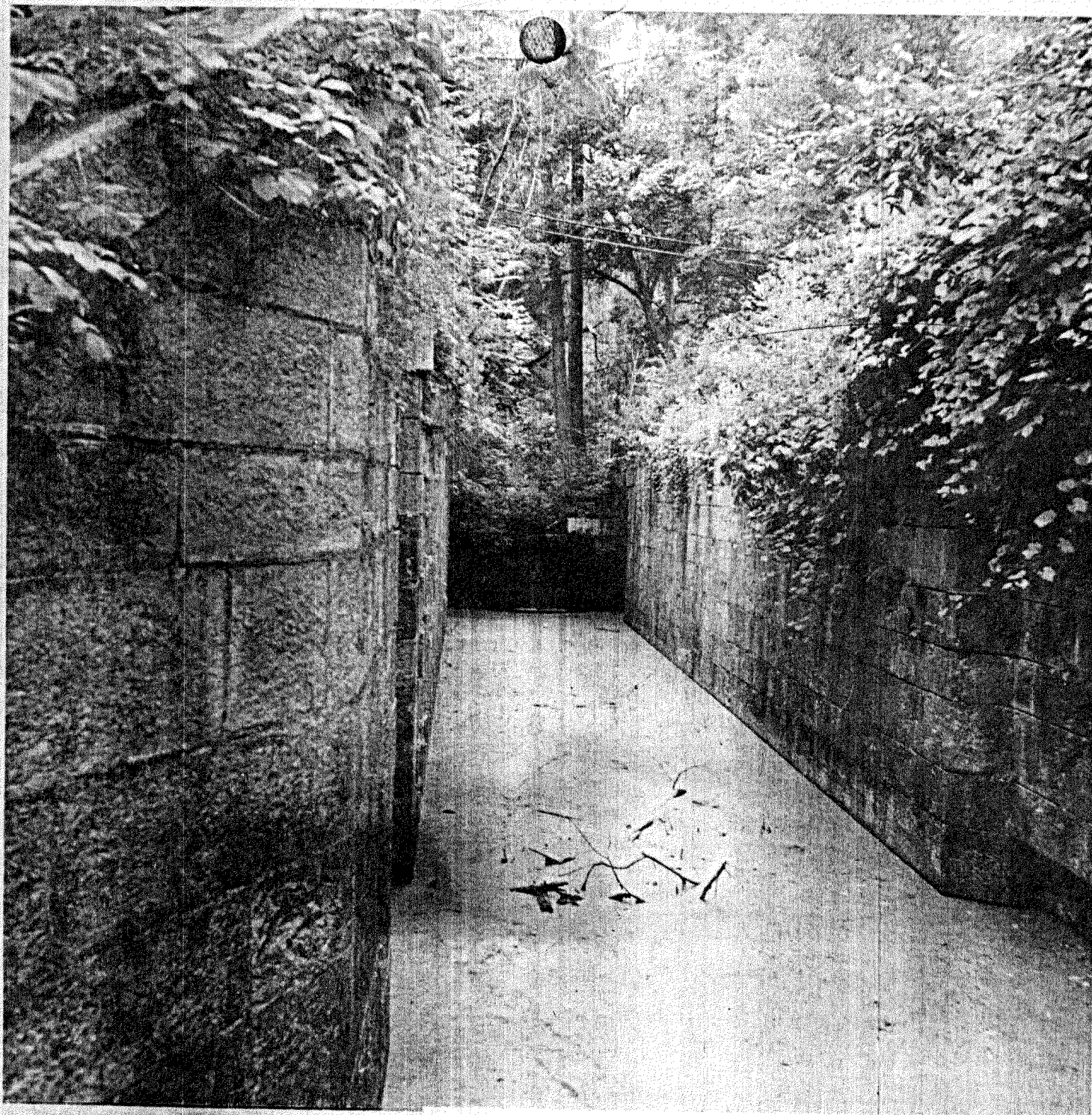
DePuy Hostelry 1797 High Falls, New York



Roebling Aqueduct Looking from Minisink Ford, New York



Delaware and Hudson Canal Company Office Honesdale, Pennsylvania



Lock No. 2 Creek Locks, New York

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Road and proceeds in a westerly direction down the center of said road .4 of a mile, where it turns due south to intersect with Prospect Hill Road, which forms the southern boundary of the district. The eastern boundary is U. S. Highway 209.

Ownership: Public and private.

The Cuddebackville section is one of the best preserved sections of the Delaware and Hudson Canal. Like the section at Alligerville it contains water. Features that enhance the value of this section of the canal are the Cuddebackville Basin, the Neversink Feeder, and the remains of the Neversink Aqueduct. Near the canal are a number of buildings of interest--the Jeffersonian House (a canal hotel) c. 1840-1850, Simon Berman's General Store (now the town clerk's office), the Blacksmith's House, and the DeWitt Clinton Birthplace. The buildings, however, have been altered in more recent times, and a careful job of restoration would be required in order to bring them back to the canal period.

The Regional Chamber of Commerce has recently endorsed a proposal to set aside the Cuddebackville district as a public park.

Roebling Aqueduct, New York and Pennsylvania

Location: Spans the Delaware River between Minisink Ford, Sullivan County, New York and Lackawaxen, Pike County, Pennsylvania.

Ownership: Ernest Huber, Roebling Bridge, Minisink Ford, New York.

Between Lackawaxen, Pennsylvania, and Minisink Ford, New York, the Delaware and Hudson Canal had to cross the Delaware River. In the beginning the company utilized the river and floated its boats across against the current, but it was a tedious process and one plagued by