Canal building has flourished for centuries in the Old World and is still active today, but previous to the American Revolution little activity of this nature had appeared in the New World. The only canal of any consequence was a short line built by Lieutenant Governor Cadwallader Colden in Orange County, New York, about 1750. This work was little more than a shallow ditch and could only receive ships of small draft, but it was designed for the hauling of stone, and it marks the beginning of artificial waterways in the United States. The first survey for a canal for general transportation purposes was in the colony of Pennsylvania. As early as 1762 the merchants of Philadelphia presented a request to the general assembly that a board be appointed to explore the west branch of the Susquehanna River with the aim of connecting that stream by a short portage with a tributary of the Ohio. During the remaining years of the eighteenth and the first quarter of the nineteenth century many miles of canals were constructed in Pennsylvania; yet with all this mileage the state still lacked an efficient means of internal communication because all the canals were in the eastern part of the state.

The year 1826 saw Pennsylvania pursuing an entirely new policy in canal construction. This was largely due to the desire to attract western trade to eastern markets. Especially was this desire stimulated as Pennsylvania witnessed the economic progress made by New York following

1 Read at the meeting of the Historical Society of Western Pennsylvania on March 27, 1934. A “History of the Beaver and Lake Erie Canal” was submitted by Mr. Corkan in 1927 in partial fulfillment of the requirements for a master’s degree at the University of Pittsburgh. The author is principal of the New Brighton High School. Ed.

the completion of the Erie Canal. Trade that formerly went down the Mississippi now went to Buffalo and thence to New York via the canal, the main artery of commerce between the East and the West. Overland commerce from the Ohio Valley could hardly be expected to go to Philadelphia when it was so much easier to reach the Erie Canal. Citizens of Philadelphia saw their city falling behind New York in population and prosperity. Consequently the passage of the act of February 25, 1826, is not surprising. This law authorized the construction at the expense of the state of a canal to be known as the Pennsylvania Canal.

With the completion of the Pennsylvania Canal from Philadelphia to Pittsburgh in 1834, the commonwealth had a well-defined system of internal transportation. Not only had the efforts of Pennsylvania and New York developed their own interests, but they had also contributed greatly to the welfare of the nation as a whole. By the construction of the Erie Canal the Great Lakes were linked with New York, and upon the completion of the Pennsylvania system the Mississippi and Ohio valleys were connected with Philadelphia. Thus by 1834 there existed two well-developed waterways crossing the country from the East to the Mississippi Valley. The joining of these two great systems in Pennsylvania was accomplished by the building of the Beaver and Lake Erie Canal.

The first quarter of the nineteenth century found Ohio, as well as Pennsylvania and New York, embarked on a program of canal building. Chief among the canals constructed was the Ohio Canal from Cleveland on Lake Erie to Marietta on the Ohio River. This canal offered an indirect link between the western termini of the two great waterways in New York and Pennsylvania. In April, 1825, the government of Pennsylvania passed an act providing for the construction of a canal to connect Pittsburgh with Lake Erie, and shortly thereafter the legislature of Ohio provided for a crosscut canal to connect the Ohio Canal with this proposed western Pennsylvania canal. In an act passed January 10, 1827, Ohio incorporated the Pennsylvania and Ohio Canal Company within the state of Ohio. A copy of this act was immediately dispatched to the Pennsylvania legislature then in session. So popular was

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the project with this body that on April 14, 1827, the Pennsylvania and Ohio Canal Company was incorporated by the general assembly.

The legislature of Pennsylvania considered the respective merits of two proposed routes for a canal joining the Ohio River with Lake Erie. The first route suggested was by the Allegheny River to French Creek, thence up that stream and one of its tributaries to Conneaut Lake. From this point an artificial waterway could be built to the city of Erie. The other route proposed was by the Ohio and Beaver rivers to New Castle, from there by the Shenango River or one of its tributaries to the vicinity of Conneaut Lake, and thence to Erie by canal. The Beaver to Erie course was finally selected, probably because of the economic advantages to be gained by tapping the Ohio River trade at West Bridgewater, twenty-five miles west of Pittsburgh. Also, the valleys of the Beaver and Shenango rivers were much closer to the Ohio canal system than was the Allegheny and French Creek route. The wisdom of this choice was shown in the fact that the Pennsylvania and Ohio Canal Company completed a crosscut canal from the Ohio Canal at Akron to Mahoning a short time after the first division of the Beaver and Lake Erie Canal was opened.

Considerable agitation arose in favor of the building of a railroad by the state instead of a canal, and for some time the controversy threatened to upset the entire project. The supporters of water transportation won out, however, and a definite canal system was planned for western Pennsylvania. It was to consist of a well-developed channel in the Ohio River extending from the city of Pittsburgh to the town of Beaver, of the Big Beaver Creek, canalized from Beaver to the town of New Castle, where a crosscut canal was to connect this system with the Ohio system, and of an artificial waterway to be constructed from New Castle along the Shenango River and Crooked Creek to Conneaut Lake and thence by the most direct route to the city of Erie. By the act of March 21, 1831, the legislature of Pennsylvania provided for the construction of the Beaver division of the Beaver and Lake Erie Canal. This division was

5 Public Documents Concerning the Ohio Canals . . . Comprising a Complete Official History, 2 (Columbus, 1828); Swank, Progressive Pennsylvania, 139; Pennsylvania Archives, fourth series, 5:714 (Harrisburg, 1901).
6 Canal Commissioners of Pennsylvania, Report, 1831, p. 31.
to commence on the Ohio River at the mouth of the Big Beaver and to extend up that stream to the town of New Castle. Not only was this unit to connect the important manufacturing town of New Castle with the Ohio Valley but it was also to meet the proposed Pennsylvania and Ohio line at New Castle junction, thus promising to bring about the long desired union with the Ohio canal system.

The legislature provided the sum of one million dollars for this project and the canal commissioners of the state entered upon the task of construction immediately. Ground was broken for the Beaver division on July 28, 1831, at New Brighton. It was considered such a momentous event in the history of Beaver County that a great celebration was held at that place. Major Robert Darragh was president of the day, M. F. Champlin was chief marshal of the ceremony, and Major B. G. Goll was assistant marshal. All of these men were prominent in the public life of the Beaver Valley. The ground was broken by Revolutionary soldiers amid the firing of cannon and the cheers of the assemblage. A dinner followed, and the main address of the day was delivered by John Dickey. Toasts were proposed by prominent men of the surrounding counties. Work on the canal commenced the next day and continued uninterrupted until the division was finished three years later.7

In the building of the Beaver division the engineers followed the common method pursued in canal construction at that time. Wherever possible the route of the canal followed the bed of the stream. Dams were erected at certain points on the stream to raise the water level sufficiently to float the boats. The position of these dams was determined by the altitude of the stream. If the fall of the stream was very slight the dams were far apart, but if the gradient was very rapid the dams must be close together. Where it was necessary to follow dry routes water was transported by aqueducts from reservoirs. This section of the canal contained seven dams varying from seven to fourteen feet in height. There were two aqueducts and seventeen guard and liftlocks overcoming a rise of 132 feet. Two outlet locks were provided for the canal. These were 25 feet wide and 120 feet long. They were the largest on the entire line and were so constructed that they could admit the smaller type of steamboat

that operated on the Ohio. Although the canal itself was not designed to admit steamboats, the commissioners felt that the trade of the towns of Beaver, Bridgewater, Rochester, New Brighton, and Fallston, all of which were grouped near the mouth of the canal, would benefit by these locks and by a huge dam, to be constructed at Stone's Point. The construction of the locks at Stone's Point, or Bridgewater, was considered the greatest engineering task on the entire division. They were begun in 1831 and were finished two years later. They were named after Stephen Girard, Pennsylvania's outstanding millionaire of the twenties, who had bequeathed the sum of three hundred thousand dollars to the commonwealth "for the purpose of internal improvement by canal navigation." This money was turned over to the legislature by Governor George Wolf in 1832, and most of the amount went into the construction of the Beaver division. The dam and the locks were of stone held together by iron bars and cement and were so well built that after the floods of almost a century they still stand, relics of bygone days, guarding the mouth of the Big Beaver. A well-preserved inscription of the builders may be read on a slab of sandstone, formerly set high on the west side of the upper part of one of the locks, but now erected as a monument in the city park at Rochester, Pennsylvania.

When construction was started on the Beaver division in the summer of 1831 it was estimated that the line would be completed as far as New Castle by December, 1832, but the work was not finished until May 28, 1834. The canal commissioners had underestimated the time required to construct this division, and they were equally mistaken about the cost of the line. When the contracts for the work were awarded the estimated cost was $335,317.82, but, in the report of this division, read before the legislature in 1836, the actual expenditure was placed at $481,282.98. This last figure did not include any of the money spent on the line for repairs during the years 1835 and 1836.

With repairs on this division of the Beaver and Lake Erie Canal nearing completion in 1836, the commissioners turned their attention

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8 Canal Commissioners, Report, 1831, p. 12; Gordon, Gazetteer, part 1, p. 52.
9 The Will of the Late Stephen Girard, Esq., 29 (Philadelphia, 1832); Pennsylvania Archives, fourth series, 6: 25–28; Bausman, Beaver County, 1: 246, note 2.
10 Gordon, Gazetteer, part 1, p. 52; Canal Commissioners, Report, 1836, p. 5.
to the northern part of the line, known as the Erie extension. This extension comprised three-fourths of the main line between Pittsburgh and Lake Erie, but it was not completed until after the Beaver division and the Pennsylvania and Ohio Cross Cut Canal had been in operation for many years. In Pittsburgh and the Beaver Valley commercial interest was directed toward that line by which Ohio trade could best be obtained. Consequently that portion of the Beaver and Lake Erie Canal north of New Castle was referred to as an extension and never received the support that Pittsburgh interests gave the Beaver and crosscut canals. The survey for the extension revealed many possibilities for canal construction. Because a portion of the line ran along the Shenango River it was referred to as the Shenango division. Although the Shenango division extended to the outlet of Conneaut Lake, only three-fourths of it was provided for at this time. From New Castle the line followed the east side of the Shenango River to the town of Greenville, a distance of 41.75 miles. There it was thought best to cross the Little Shenango Creek to the mouth of Crooked Creek, a distance of 3.75 miles. The total length of this particular section of the Shenango division was therefore 45.5 miles.

Just as the Beaver division offered certain problems of construction, so did the Shenango division test the knowledge of the engineers who worked upon it. The Shenango River was shallow and winding and frequently spread out over broad valleys. Canal construction in the bed of the river was necessary and steps had to be taken to safeguard the canal from the effect of floods. This condition was met by changing the channel of the river in many places. One of the principal objections that was usually advanced against slackwater navigation in Pennsylvania was the scarcity of a staple water supply. There was no such deficiency, however, on the Shenango division, where many small streams were available as feeders. All this line was readily adapted to canal construction.

These 45.5 miles of the Shenango line were well on towards completion by 1838, so the remaining 18.5 miles were placed under contract

11 Canal Commissioners, Report, 1836, p. 19; Daily Pittsburgh Gazette, August 29, 1833.
12 Canal Commissioners, Report, 1836, p. 67.
13 Canal Commissioners, Report, 1836, p. 67-70.
in that year. This part of the division began at the mouth of Crooked Creek and followed the valley of that stream by way of Pymatuning Swamp and the Beaver dam summit to the termination of the French Creek Feeder at the outlet of Conneaut Lake.\textsuperscript{14} To store up the surplus water of the rainy season and to provide for the summer droughts, the engineers decided that reservoirs were needed. The site chosen for the first of these was at Hartstown, where was located the huge Pymatuning Swamp. It was a wild, dismal, treacherous piece of ground and of little value. Surrounded by high banks, this swamp offered an excellent situation for a reservoir, and after the land had been cleared of timber to prevent disease the southern portion was flooded. The result was an artificial lake of some six hundred acres, ten feet deep and six feet higher than the level of the canal. The estimated capacity of this reservoir was 215,622,000 cubic feet.\textsuperscript{15}

The second important reservoir of this line was Conneaut Lake, which had been used as a reservoir for the French Creek Feeder. The lake was four miles long, two miles wide, and covered about twenty-six hundred acres. It offered a natural reservoir great enough to meet the demands placed upon it by the feeder, but when the engineers of the Beaver and Lake Erie Canal decided to use it in the same capacity on their canal a water shortage was feared. To make the lake capable of furnishing water for both systems it was decided to raise its level. This was accomplished by erecting embankments at the low points around the lake, an operation that raised the water level three feet. The capacity given to Conneaut by this work was estimated at 736,164,000 cubic feet of water. Later, when more water was desired for the northern line, an attempt was made to give the lake an additional elevation of eight feet, but the project failed. After the canals were abandoned the lake was reduced to its former level.\textsuperscript{16}

The northern part of the Beaver and Lake Erie Canal was known as the Conneaut division. The survey line began at the Beaver dam summit and continued over the Conneaut summit and through the Conneaut

\textsuperscript{14} This feeder extended from a point just above Meadville on French Creek to Conneaut Lake and was connected with the Franklin Division of the Pennsylvania Canal, which joined the Allegheny River at Franklin. Hence, when opened for traffic in 1834, it made possible an alternate route from Pittsburgh to Conneaut Lake.

\textsuperscript{15} Canal Commissioners, \textit{Report}, 1838, p. 99-114.

\textsuperscript{16} George T. Fleming, in \textit{Pittsburgh Gazette Times}, October 7, 1917, section 5, p. 5.
the town of Girard, where it turned east and ran parallel with the lake to Erie. The outlet of the canal at that city was located just west of the public dock, between it and Reed’s dock. The state had placed two thousand acres of ground at the disposal of the borough of Erie to be used in construction of a canal basin and harbor. The resulting harbor of Presque Isle had no superior on the lake. Although this canal was not completed by the state, the line when finished followed closely the original survey.

The Conneaut division covered a distance of 45.5 miles. The contract for 11.5 miles of the work was let by the state in 1838, and the remainder of the line was placed under construction two years later. Of the divisions of the Beaver and Lake Erie Canal the one lying between Conneaut Lake and Erie was the most difficult to build. Two great problems confronted the engineers on this division. The first of these was the great amount of lockage required and the second was the scarcity of large streams that could be used as part of the line. To build a waterway successfully over the Conneaut division an elevation of 509.38 feet must be overcome. From Beaver to Conneaut Lake, a distance of ninety-one miles, the lockage necessary was 416.4 feet. The northern division, one-half of this distance, required considerably more lockage. According to the specifications prepared by the state for this division, seventy-one locks were deemed necessary to overcome the elevation of this line. On the northern part of this division there were as many as seven locks per mile, and Lockport probably received its name from the presence of twenty-seven locks within nine miles of the town. According to sailors the Conneaut division “was just a string of locks.”

During 1840 and 1841 construction work on the Beaver and Lake Erie Canal was at its height. The Shenango division was being completed, the Conneaut division was well under way, and the Beaver line was undergoing repairs made necessary by floods of the preceding seasons. This work was costing the state an immense sum of money. The revised estimate of the cost of the Shenango division, or the line from
New Castle to Conneaut, was placed by the canal commissioners at $1,681,857.26. This amount was considerably in excess of the original estimate. By 1843 the state had spent $2,039,199.66 on the French Creek project and the Conneaut division. The state had thus spent a total of $3,721,056.92 on the Erie extension.\(^{20}\)

Before the extension was completed the state decided to dispose of the canal to someone who would complete the extension and assume the state's indebtedness for the canal. The legislature on July 27, 1842, authorized the governor to advertise for bids in the newspapers of Pittsburgh and Philadelphia.\(^{21}\) The Erie Canal Company, organized for the purpose, offered to finish the extension, received a charter on June 15, 1843, and immediately went to work. On January 10, 1845, when satisfactory proof of the completion of the extension had been given to the state Senate, Governor Porter turned the complete line of the Beaver and Lake Erie Canal over to the Erie Canal Company.\(^{22}\)

The opening of the Conneaut division in 1844 marked the completion of the Beaver and Lake Erie Canal, and with the breaking up of the ice in the spring of 1845 navigation appeared on the entire canal from Beaver to Erie. At the same time Ohio trade, passing through the crosscut canal, found its way to Erie and Meadville. This commercial development brought prosperity to western Pennsylvania during the fifties and sixties. The principal shipping centers on the Beaver division during the thirties were Bridgewater and New Castle. With the opening of this line boats were placed on the canal by many firms from these towns. The first boat launched at New Castle was the "Rob Roy," built by Dr. William Shaw. Shortly afterwards there appeared the "Alpha," which was launched by James I. White. The first packets that appeared on the division were those of Captain Thomas Campbell of Bridgewater. These early craft were similar in construction. They were forty feet long and eight feet wide and they resembled a flatboat with the deck extended be-


\(^{21}\) Daily Pittsburgh Gazette, August 31, 1842.

\(^{22}\) Pennsylvania Archives, fourth series, 6:1079.
yond the limits of the keel. They were slow and cumbersome and averaged about two and a half miles an hour. The next step in boat building came in 1840. In that year the first of the few steamboats ever tried on the canal was launched at New Castle. This was a boat built by David Frisbie, who had been a ship and steamboat builder in New York. The owners of the craft were Dr. Joseph Pollack, his son Hiram, and his son-in-law, Captain William McMillen, who assumed command. The boat, named the “Isaphena,” was placed in the service between New Castle and Pittsburgh. All other packets transferred their passengers at Stone’s Point to the steamboats on the Ohio. Steamboats had been tried on the main line of the Pennsylvania Canal, between Pittsburgh and Johnstown, but they had proved unsuccessful. The force of the paddle-wheel on the water washed away the soft banks of the canals. On the “Isaphena” this was guarded against by two specially constructed wheels. The boat, however, drew too much water for the Beaver River and it was necessary to transfer the engine to a new hull. This was done in October, 1840. The rebuilt craft worked successfully and proved immensely popular, controlling all the passenger service until forced off the canal by superior craft.23

With the opening of the entire canal there appeared the fine packets of the Reed line of Erie. These packets were sumptuously fitted up with berths and staterooms, served excellent meals, and compared very favorably with the first Pullman trains for luxury. After 1849 the line was sold to R. G. Parks and Company of Beaver, who maintained the same first-class service. Some of the boats operated by this firm were the “Queen City,” the “Pennsylvania,” the “Mayflower,” the “Niagara,” and the “Ohio.” Their chief features were speed and comfort. These packets made the trip from Erie to Beaver in thirty-six hours. Boats left Erie and Beaver daily. The fare, which was four dollars, included berth and meals. To secure speed the boats were drawn by three horses and to maintain a fast schedule the horses were driven at a trot and were changed every ten miles. The crew of these boats consisted of a captain, two steersmen, two bowmen, a lock lifter, a chambermaid, a steward, a cook, and a helper.

It is interesting to consider some of the schedules upon which the various packets operated. In 1852 all the companies arranged their trips southward to connect with the railroad service between Rochester and Pittsburgh. A traveler leaving New Castle at 7:00 P.M. could arrive in Pittsburgh at 8:00 A.M. the following day. The trip required a transfer at Bridgewater from boat to train. The fare was a dollar each way between New Castle and Pittsburgh, a reduction of sixty-two and a half cents over the fares prevailing on the entire water route in 1834. All these boats connected with the coach lines operating north and west.

One source of passenger traffic that filled many packets on the canal was the emigrant trade. Foreigners arriving at Erie from Buffalo embarked upon the canal in large numbers, as this route provided the most direct way of reaching the Ohio Valley. Although the freight boats had no accommodation for passengers, they frequently carried large groups of emigrants. Their charge from Cleveland to Rochester was sixty-six cents per person, but the emigrants had to furnish their own bedding and food for the trip, which took forty-eight hours.

The service that the canal rendered as a carrier of freight was its chief value to western Pennsylvania and was the principal factor in developing the rich territory lying along the Erie extension. Previous to this time the coal mines of the district were of little value because of the high cost of wagon transportation. No blast furnaces or factories were built through the northern counties until the canal offered them an outlet for their products. Without the Beaver and Lake Erie line, the vast mineral resources of northwestern Pennsylvania would have lain dormant for many years. The increased commercial activity for which the canal was responsible is perhaps best illustrated by the increased trade it brought to Pittsburgh. Before the opening of the Beaver division one lone boat plied the waters daily between Beaver and Pittsburgh. With the opening of the Beaver division in 1834 this service doubled. When the Erie extension was opened in 1845 three steamboats made round trips daily between Beaver and Pittsburgh to take care of the passenger service alone, and to these were added a number of freighters that carried goods between the outlet of the canal and the "forks of the Ohio." Well could an editor commenting on the prosperity of Pittsburgh say: "By the Erie Extten-

*4 Daily Pittsburgh Gazette, July 19, 1834.

*5 Durant, Lawrence County, 16.
sion we have access to all Northwestern Pennsylvania. By the Cross Cut and Ohio canals to Northern Ohio and the Heart of that State; and by the two outlets at Erie and Cleveland to the Lakes and the Canadas."

To the traveler, the Beaver and Lake Erie Canal offered a great advance over the slow and cumbersome stagecoach. The speed (five miles per hour) attained by the luxurious packets of the Reed line was faster than western Pennsylvanians had previously traveled through the section served by the canal. They were, however, to experience still more rapid transportation in the next few years. The field of transportation was being invaded by the railroad, and canal travel was nearing its end. Soon the valleys of the Shenango would no longer reëcho to the whistle of the canal boat or to the bray of the plodding mule along the towpath.

The chief competitor of the Erie extension was the Erie and Pittsburgh Railroad. This company first appeared in 1846, but little success attended its efforts to connect Erie and Pittsburgh by rail. Before it was able to commence operations the Ohio and Pennsylvania Railroad was completed. Since this road covered the southern section of the Erie and Pittsburgh project, the Erie and Pittsburgh Railroad Company gave up that part of its proposed line. A few years later the construction of the New Castle and Beaver Valley Railroad brought rail communication to the town of New Castle. This meant that the Erie and Pittsburgh company again had to revise its plans and shorten its proposed line. Then financial troubles developed and the company failed. In 1858 the members of this concern, realizing the commercial possibilities in the northern counties, reorganized the Erie and Pittsburgh Railroad Company in order to construct a road between New Castle and Erie. The company commenced construction immediately and by 1863 had completed and placed in operation sixty-six miles of the line. The following year fifteen more miles were added, and the road reached from Girard to New Castle. The company never extended its line to Erie, but sent its trains into that city over the tracks of the Lake Shore Railroad.

The completion of the Erie and Pittsburgh road in 1864 forecast the end of the canal. The waterway could not compete with the railroad. All its passenger traffic was immediately lost and its freight receipts

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26 *Pittsburgh Daily Gazette and Advertiser*, May 22, 1845.
dwindled alarmingly. This meant a decrease in tolls and financial disaster for the Erie Canal Company. The annual reports that the company sent to the auditor general of Pennsylvania show that the condition of the company grew rapidly worse. While the owners of the canal might have hoped to compete with the Erie and Pittsburgh line, against the mighty Pennsylvania Railroad, which leased the Erie and Pittsburgh Railroad in 1870, they were powerless. Consequently the Erie Canal Company was declared bankrupt and its holdings put up for public sale. The Beaver and Lake Erie Canal was sold to the Erie and Pittsburgh Railroad Company, which turned it over to the Pennsylvania Railroad Company. The Pennsylvania Railroad Company operated the canal during the season of 1871, after which it was abandoned. All the works on the canal, such as locks and toll houses, that were salable, were disposed of. Even the stone in some of the locks was sold. In many places the canal was filled up and the land put to other uses, and so effectively was this done that scarcely any traces of the old canal ditch were left. Only the ruins of a few locks have withstood the ravages of time and are still to be seen along the Shenango and the Big Beaver. The canal boats, which were either sold or discarded, are things of the past. The last of these heard of lies buried in Pymatuning Swamp. Few of the men who sailed this famous waterway are left, and even those who remember the canal days find it difficult to locate the basins, aqueducts, feeders, and wharves of the old canal. The present generation scarcely realizes that there ever was a Beaver and Lake Erie Canal.