SOME EARLY COUNTY BRIDGES

About 1809 the Legislature of Pennsylvania incorporated companies, authorizing the construction of bridges at McCall's Ferry, Columbia, Harrisburg and Northumberland, the proposed bridges to span the Susquehanna river. On March 30, 1811, the Legislature passed an act specially incorporating the McCall's Ferry Bridge Company, authorizing the issuing of 1,000 shares of stock at $100 each, to pay for the construction of the same, and of said stock $5 was to be paid upon subscribing for the same, and the balance later on. This act will be found recorded in Law Book, No. 12, at page 350. By a subsequent act of April 2, 1811, the Legislature appropriated the sum of twenty thousand dollars ($20,000), towards erecting the bridge. The erection of the bridge at McCall's Ferry was a difficult, tedious, yet brilliant, operation, the details of which are lucidly narrated in a letter by Mr. Theodore Burr, the builder of the same. The bridge was destroyed in 1817 by the accumulated ice in the contracted gorge which it spanned, and it has never since been reconstructed. At one time it was the winter line of communication between Philadelphia and Washington.

Theodore Burr, the man who constructed all the bridges authorized in the Act of 1809, was a native of Connecticut, and a relative of the famous politician, Aaron Burr. His home whilst engaged in constructing the bridges was in Harrisburg, where he erected a fine house, which was subsequently owned and occupied by Mr. John Haldeman. Theodore Burr

was born at Torringford, Conn., in 1762, and in 1789 married the great-granddaughter of Capt. Cook, the great English navigator. He died at Middletown, in Dauphin county, November 21, 1822, while superintending the erection of a bridge across the Swatara there.

The commissioners for the construction of the bridge were Abram Bailey, Moses Marshall, John G. Parke, Jonas Preston, Isaac Darlington and Jesse John. These gentlemen issued and signed shares of stock of which the following is a copy:

"This is to certify that—having subscribed $5, five dollars, is entitled to one share of the stock of the Company for erecting a bridge over the River Susquehanna, at McCall's Ferry, subject to the payment of ninety-five dollars, in such installments as shall be called for by the President and Directors of said Company, transferable only in person or by Attorney legally constituted."

In the issue of the Lancaster Intelligencer of December 23, 1815, appeared the following, showing that the value of a bridge at McCall's Ferry was tried and proven, although there is none there to-day: "We have the pleasure of stating that the bridge at the McCall's Ferry is so far completed as to afford safe and ready passage for loaded wagons, carriages and travelers. By this route about ten miles will be saved in traveling between Lancaster and Baltimore."

The McCall's Ferry and all the other bridges were erected on what is known as the Burr bridge plan. The Harrisburg bridge was commenced in 1812 and completed in October, 1816, at a cost of $192,138.

Theodore Burr's Letter.

Mr. William A. Kelker, of Harrisburg, communicated to the writer the

following, under date of February 26, 1907:

Mr. S. M. Sener, Librarian, Lancaster County Historical Society:

Dear Sir: In reading over Niles' Weekly Register dated November 18, 1815, I found the enclosed letter, and thinking that it might be of interest (if not of value) to your society I had it copied. Please accept it with my compliments and best wishes for the success of your organization.

Very truly yours,
WILLIAM A. KELKER.

February 26, 1907, Harrisburg, Pa.

McCall's Ferry Bridge.

Copy of letter† from Theodore Burr to Reuben Field, bridge-builder, Waterford, New York:

"Harrisburg, Pa., Feb. 26, 1815.

"Dear Sir: I can now inform you, with a considerable degree of satisfaction, that I have at length succeeded in getting up the long arch at McCall's Ferry. This arch is, without doubt, the greatest in the world. Its length, between the abutment and pier, is three hundred and sixty feet, four inches; the chord line of the arch, three hundred and sixty-seven feet. The width of the main part of the bridge is thirty-two feet; the wings of the pier spread eleven feet eight inches on each side, which makes a base of fifty-five feet four inches. At the abutment, the wings spread seventeen feet each, which makes a base of sixty-six feet. The altitude or rise of the arch is thirty-one feet. The arch is double, and the two segments are combined by king-posts seven feet in length between the shoulders, and are united to the arch by lock-work. Between the king-posts are truss-braces and counteracting braces. The

†Copied from Niles' Weekly Register, Baltimore, Md., Vol. 9, page 200, published in 1815.

arch stands firm and remarkably easy, without the least struggling in any part of the work.

"It will be difficult to convey to you, by the description, the process by which we finally succeeded in surmounting the almost unconquerable difficulties opposed to its erection, not only by nature, but by all the elements combined.

"In the first place, we raised it on floats lying in the water, ranged along the shore nearly a quarter of a mile below the abutment. The floats were placed at proper distances, with their ends to the shore, and on each of them were raised two bents or frames, varying in height to correspond with the curve of the arch. This made sixteen bents, on which the grand and enormous structure was raised, amidst tremendous storms and tempests, accompanied with floods and whirls and the bursting of waters. The scene at times was truly terrific. Frequently, in the darkest nights we were under the necessity of going between the floats, and from one to the other, on small timbers, over a depth of one hundred feet of water, in order either to shorten or lengthen out the ropes by which they were fastened, and to brace off or haul in the floats, as the water rose or fell. It took $1,500 worth of ropes to stay the works against the flood and storms that we often had to contend with; and you must understand that storm and wind are much more frequent and tremendous at this place, than almost any other, owing to the great height of the mountains which closely border the river on each side.

"From the time we commenced till we got the arch on the floats was ten weeks; during which time the water was nearly stationary, but continually either rising or falling. At one time it was twenty feet above common low

water mark; but in general it rose and fell from ten to twelve feet.

"You will now observe that the arch stood length-ways up and down the river, along the shore of and uneven points and projections of rocks, which kept us always in jeopardy, in consequence of the rising and falling of the water, as I before observed. On the 17th of December, we had the whole in readiness to move up to the abutment, and on the same day the anchor-ice began to run a little. The next (which was the day we had fixed upon to move the arch to its place) the ice ran in still greater quantities, and about one o'clock it stopped for the space of about half a mile, and began to crowd the floats. It continued to move for more than one hundred miles above, where the river is from one and a-half to two miles wide; whereas, at this place you will observe it is only six hundred and nine feet in high water and in low water the whole river runs in the space of three hundred and forty-eight feet. In this state it has been sounded by Doctors Preston, Marshall and Bailey, gentlemen interested in the bridge, and ascertained to be one hundred and fifty feet in depth; and it will perhaps not be improper to observe here, that taking a view of the great extent of country through which the Susquehanna runs, the number of great and innumerable smaller streams that empty into it in its course, there is in all probability running in this space of three hundred and forty-eight, and under the long arch, at least fifteen times the quantity of water that passes under the Union Bridge at Waterford.

"The ice continued to run during the 9th, 10th, and 11th, and pressed so hard against the floats that it raised up the outer ends of some two feet, others three feet; some less and some

none at all; so that the scaffolding began to stand in all directions, the braces breaking and bursting out the spikes and bolts and the arch careening heavy towards the store, touching only here and there upon the timbers which supported it; but as yet it had sustained no injuries. The only chance of saving it now depended on the ice either becoming strong enough to support it, or gradually melting away so as to go off easy, without tearing the whole with it. I determined upon trying it on the ice, and on the 12th we fixed our capstan on the ice, and fastened ropes to it and to the arch to sustain it from falling, and also put some braces between it and the rocks on the shore.

"From this time till Christmas we could do but little, in consequence of a thaw which took all the ice out of the river except about half a mile that first stopped; which we also expected would go, but it did not, soon after the weather became severe and having a mountain of ice upon us, the average height of which, for about a mile above and below us, was ten feet above the surface of the water at the shores. It did not, however, effect our works so much as might have been expected. The outer ends of the floats had settled down about a foot by the thaw; but this hove them up something worse than they were at first. At the same time the whole body of ice moved down, from twenty-five to thirty feet, which bore so hard against the floats, that they pressed so hard against the rocks, that it broke and mashed more than half of them to pieces. Still the arch remained unhurt and the scaffolding stood beyond expectation.

"On the 28th we commenced leveling the ice, in order to take the scaffolding and arch off the floats on to it.

I had 18 men employed at that business and I presume that on an average they were in, up to their arms, forty times each in one day. But it will be necessary to explain to you the nature of the ice here. It is made up of floating ice from one-fourth inch to two inches thick. It forms from fifty to two hundred and fifty miles above the bridge, where the water is not very rapid, but very wide; and in some winters runs constantly,for three or four weeks without stopping. From the head of Turkeyhill falls to within three-fourths of a mile of the bridge, a distance of about fifteen miles, there is almost one continued fall, the bed of the river abounding with rocks that break the ice very fine. The river being so long and wide above, there is an immense quantity of this ice formed, and so very narrow at the bridge, that there it becomes an immense mass from twelve to fifteen feet deep, before it stops. When this takes place, all the ice from above drives beneath into the deep water, until it becomes from sixty to eighty feet deep; and you may, by digging down three feet take a pole sixty feet long, and with the strength of your hands run it down the whole length, and find no termination of what is called the mush ice.

"On the 29th, we began to bridge a space of about fifty feet from the floats, which was soft, in order to move the arch sideways to where the ice was stronger. It took us from the 29th to the 8th of January to prepare one-half of the arch for moving. This was Sunday; and by evening we had eight capstans, with each a double-fold tackle fast to it, and with assistance of about fifty citizens of the vicinity we made a move of four feet.

"On the morning of the 9th, we four-folded all the capstans, except one, and moved the one-half of the

arch off sideways, forty-six feet, on to the runners one hundred and eighty feet long. On the 10th, we fixed the cross-runners (upon which we moved it sideways) on to the runners that extended lengthways with the arch, and confined all tight together. On the 12th, in the forenoon, it rained; in the afternoon we levelled the ice for a road, before it would freeze again. The 13th, we moved the arch seventy-seven feet; the weather soft. 14th, we made some rollers; the weather still soft, but snowing. 15th, had but few hands; moved the arch fifty feet. 16th, we introduced the rollers everywhere, and moved the arch 217 feet in three hours. 17th, made a move upwards of 300 feet. 18th and 19th got up the one-half of the arch.

"We now commenced upon the other half which we fitted and got up in eight days. Now we wheeled to the right and left, one-half of the arch to the abutment, and the other half to the pier; fitted the buts to their places; cut off the scaffold-posts at the bottom some more, some less, from one to twelve inches, so as to bring the whole arch to its perfect height and curve, and then united to centre. On Monday, the 30th, about nine o'clock at night, we had the arch everywhere keyed up, and on Tuesday morning it stood of itself. Along the middle way of the arch the scaffolding had fallen away six or seven inches; but less and less towards the abutment and pier. To have an idea of the cause of this, you must understand, that there is a regular ebbing and flowing in the river in this place, once in twenty-four hours, of from two to four feet, which has a proportionate effect on the ice, causing it to rise and fall from fifteen inches to two feet, which at the same

time is continually working itself down stream, slowly and imperceptibly to the eye.

"On Tuesday morning, as I observed, the arch supported itself. We examined every part of it, drove some keys, and made everything tight as possible. In the afternoon we began to cut away the scaffolding, and got down two-thirds of it before dark; then stopped an hour for refreshment, and before we began again, had two large fires made, on each side, about sixty feet from the abutment or shore. We then set to cutting down the remaining part of the scaffolding, which was completed about half past eight o'clock. The whole now exhibited the grandest spectacle I ever saw. Aided by the light of the fires, we could plainly see the shore, and the arch rising from the abutment and extending itself west out of sight. It was a joyful moment to my brave fellows; and you may well suppose they gave way to the impulse, in loud and repeated hurras. The next day was set apart as a day of rejoicing.

"The centre of the arch is sixty-one feet from common low water to the lower, and seventy feet four inches to the upper segment, and fifty-two and sixty-one feet four inches from the surface of the ice when it was put on. During the whole of this struggle, the humane feelings and kind disposition of the inhabitants, for twelve to fourteen miles distance, on both sides of the river, were manifested to a degree that I believe was scarcely ever equalled. They voluntarily assisted from day to day; so that from the 8th of January to the 1st of February, I had of this class from forty to one hundred and twenty men every day; and none ever displayed more zeal, or behaved with more order and decorum, in any service, where the most

exact discipline was rigorously enforced. They came early, stayed till dark, and returned home after night. Some attended every day; whilst others at times would ride day and night to notify and bring on troops. One day we would call on Lancaster county, the next on York, and sometimes on both in the same day, and on the most part we did not want for mer. To move an arch of such an enormous weight, fifty and sixty feet in the air, was no small business; and, had it not been for the friendship of these people, I almost doubt whether I should ever have effected the object.

"What is perhaps remarkable, is the fact, that (although liquor was handed in great abundance) there were but two persons, during the whole time, that were the least intoxicated. And what is still more remarkable, there was but one man that was injured; that was Augustus Stoughton. He fell fifty-four feet, hit on the braces twice, then into the water. He in a few days was again at work; and no other person hurt.

On the whole we were from the 1st of October till the 1st of February, in doing what might have been done in four weeks of steady weather, without floods.

It is a long arch, and you have a long letter; yet it does not explain to you one-half the difficulties we had to encounter, in getting it to its destined place.

I am, sir, respectfully, yours,

THEODORE BURR.

Mr. Reuben Fields.

The York Furnace Bridge.

A bridge was constructed across the Susquehanna at York Furnace in 1855. Mr. Jacob Huber, of York Furnace under date of January 30, 1897, wrote to Mr. George Steinman that the bridge in question was completed

in 1855 and that on April 5, 1855, four spans across the river were blown down. Then the contractors, Messrs. Black and Huber, got the old timbers back and rebuilt the bridge again. On February 9, 1857, the ice took it away, just as it was about being completed. The accompanying engraving shows the piers of the old York Furnace bridge. Mr. Huber is evidently mistaken in his date of the destruction of the bridge in 1855, as the Evening Express, of Lancaster, of the date of April 14, 1856, states that "this city and vicinity were visited by a terrific storm.....Four spans of the York Furnace bridge were carried away, leaving nothing but the piers. It was certainly the greatest 'blow' we ever saw."

The piers of the old York Furnace bridge remained up until a few years ago, when they were carried away by the ice freshet. The accompanying picture of the piers is from a negative made by the late William L. Gill, whose "hobby" was landscape scenery, and who has left behind him many views, which, but for him, the present day antiquarian and historian would sadly miss.

Binkley's Stone Bridge.

Binkley's old stone bridge, built by Mr. Binkley in 1798, at a cost of $17,000, yielded to the pressure of water and ice on the night of April 1, 1857, and the middle arch fell, rendering it impassable.

The Columbia Bridge.

The Columbia bridge was commenced by Mr. Burr in the fall of 1812, and made passable in 1814, and the first injury it ever sustained was on the night of February 9, 1832, when the ice carried away about two-thirds of its length, and more or less injured the remainder. The bridge was

5,690 feet in length, and cost $232,000. In commenting upon the damage done Hazard says: "The loss is a public one. The great southern and eastern mails were carried on this route, and four stages, two from Philadelphia and two from Baltimore, passed over the bridge daily." The water in the river at that time was 19 feet above low-water mark, its height being higher than the great flood of 1784. An earlier extreme high flood was in 1740.

A Near-at-Home Bridge.

Hazard's Register for October 2, 1830, states; "There is now being built over the Conestoga near Lancaster, a bridge 1,400 feet in length and 23 feet in breadth, standing on two abutments and ten piers. The superstructure is of lattice work, on the principle of Towne's patent, and will contain 250,000 feet of timber. The mason work was done by Mr. Wilton and was commenced in June 1829. The bridge will be passable by Christmas of this year and will cost $30,000. Another bridge is being erected over the Little Conestoga, near Lancaster, on Mr. Burr's plan. It will be 1,000 feet in length and 40 feet above water surface. Mr. Moore is the contractor." The bridge first above mentioned was destroyed by fire in 1854.

The McCall's Ferry Dam.

The writer cannot close without saying a word in reference to the stupendous construction work now in progress at McCall's Ferry, namely the big dam in course of erection by the McCall's Ferry Water Power Company. The dam is being constructed about half a mile below McCall's Ferry, where the water is only 18 feet deep, whilst between the hills where the bridge stood, according to latest survey by competent engineers, it is 180 feet

deep. The dam is from 32 to 80 feet high and when finished the Susquehanna will have developed in that neighborhood into a magnificent sheet of water ten miles long and one mile wide and immensely deep. Five years have been figured on as the time in which to complete the dam and the estimated cost about $10,000,000.

It is to be regretted, however, that the completion of this stupendous dam will remove from sight the famous "Indian Steps," "House Rock" and "Pictured Rocks." The latter are two large rocks located in the river near Safe Harbor, the surface of which are covered with a large number of crude carvings, the work of the aboriginal inhabitants of that locality. In 1868 two sets of casts in plaster were made of these carvings by the Linnaean Society, of this city, one set being given to the American Philosophical Society, at Philadelphia, the other set being in the Linnaean's collections at Franklin and Marshall College. Our fellow-member, Mr. D. H. Landis, of Windom, has made a set of negatives of these carvings, and he proposes in the near future to present the society with a set of prints from them.

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