



YARBROUGH'S FOUNDRY

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By
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Durham, N. C.

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A paper read before
THE CASWELL COUNTY HISTORICAL ASSOCIATION

April 13th., 1880

at

Yanceyville, N. C.

by

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EXPLANATION

When the Caswell County Historical Association invited me to meet with them and talk about the county, I immediately accepted with the view of giving some history of grandfather Yarbrough and his business. Not once did I realize what I was undertaking, but later found what a job it was.

Then I decided to make a few mimeograph copies of my paper for the family and any friends who might like one. I thought a picture of the few remaining articles made in the foundry would be interesting. The pictures herewith are actual copies of photographs of these articles. The photographs of grandfather and grandmother Bradsher have no connection with the paper or contents.

Mention was made of a few persons in the paper. The one in California who provided a machine to use an alternating current of electricity and produce a direct current was Charles G. Yarbrough. The one connected with Phelps Dodge Mining Company of Arizona was W. B. Yarbrough. The one supervising the installation of machinery at The Kerr Dam was Charles T. Yarbrough. The one sent to Africa was Herbert C. Yarbrough. These latter two are the ones assisting in the supervision of installing the machinery at Niagra Falls. The one connected with the Navy is Charles A. Goodwyn. The one handling the public works for a North Carolina town is Joe C. Yarbrough.

There are several other persons ~~that~~ I wished to mention, but held myself to those following the mechanical mind of grandfather Yarbrough.

E. S. Yarbrough

Durham, North Carolina

April 13th., 1960

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Caswell is a wonderful county. Some of North Carolina's most outstanding citizens were born and reared here and their lives have given it an inspiring history. Its future will be determined by our thoughts, our ambitions and our deeds.

The small bit of history that I am bringing you tonight is written largely from the memory of those who lived during the periods or part of the periods mentioned, supplemented by facts taken from deeds, wills and other authenticated sources. It is going to be necessary to mention the name Yarbrough often for men of this family were the master forces behind the industries to be discussed, so please pardon me for doing so. The period under discussion began about 1800 and comes down to the present time.

Country Line Creek comes into Caswell County at the southwest corner and flows diagonally across the county, passing near Locust Hill, Yanceyville and Hamer and empties into the Dan River near Milton. Its bottom lands were and still are very fertile and will produce excellent crops, especially of corn. The volume of water in this stream is sufficient to produce power for any small industry.

The Old Milton and Greensboro stage road followed the general direction on the hills north of and adjacent to the creek. Many of the first families of the county owned handsome homes on this road and farmed the hills and fertile bottom lands, growing mostly corn, wheat and tobacco. They also established grist mills and flour mills on the banks of the creek utilizing the water power. Our distinguished Bartlett Yancey, in his time said, "The lands adjacent to Country Line Creek are generally esteemed as the first quality in the county." And he

mentioned pine timber and flour as two of the leading products of this section. Early mills located on this creek were Womack's near Yanceyville, King's, Long's, Clay's near Semora and Thomas's at Milton.

The one claiming our interest tonight was the Clay Mill at Country Line Creek bridge near Semora, reached by traveling east on the Greensboro Milton stage road and turning south about five miles west of Milton, going down the hill three miles and crossing the creek on a wooden bridge, not a covered one, although there were many such in those days. A short distance below the bridge a power dam had been built and below the dam was a three story mill building containing the necessary machinery for grinding ^{ing} wheat into flour and its by-products, and machinery for grinding corn into meal. There was also considerable storage space for the grains and finished products. Each mill was a separate unit driven by its own water wheel. Attached to the mill building proper was a long shed under which was a sawmill with its separate driving wheel.

In the early eighteen hundreds Judge Joseph Yarbrough and his wife, Temperance Walton, lived in Lunenburg County, Virginia, where they were owners of many acres of land and operated a grist mill and a flour mill on the Meherrin River. Among their large family was a son named Richard, who on December 23rd, 1817 wed Tabitha Johns and moved to Caswell County where he bought about fifteen hundred acres of land bordering Country Line Creek and The Clay Mill property. On November 15th, 1821 he bought from Henry M. Clay one half interest in the mill and mill tract of land, and operated it jointly with Clay until January 12th, 1829. At this time his brother Joseph came from Virginia and bought the half interest owned by Clay. Thus on this date the organization became Yarbrough's Mill and was operated by these two brothers until 1837 when Richard bought Joseph's interest and became the sole owner and operator. Joseph must have remained in the mill business and became an expert in handling millstones, for January 24th, 1860 the United States patent office issued patent number 26943 to Joseph Yar-



Home of Joseph Yarbrough, Lunenburg County
Virginia.



Richard Yarbrough and Tabitha Johns his wife.

brough of Milton, N. C. for Improvement in Dressing Millstones.

Richard prospered both with his farming and mills. However he endorsed a note for a friend to establish a mill in Danville, Virginia, and on July 25th, 1846 was called on to take up the note. To do so he was forced to sell his farms, his mills in Caswell County, and all of his interest in the Martha Walton estate in Prince Edward County Virginia. His oldest son, Joseph Joel, then twenty five years old, unmarried and already a well to do farmer and merchant bought the entire estate.

Since from this period on the management, the control and the expansion of Yarbrough's Mill was in the hands of one man it might be well and interesting to know something of him. Joseph Joel Yarbrough was born June 24th, 1821, being the eldest son of Richard and Tabitha Johns Yarbrough. His great grandfather was Joel John, a chaplain under George Washington in the Revolutionary War and later a minister of the gospel in Lunenburg County, Virginia, as well as a prosperous farmer. His maternal grandmother was Temperance Walton, a niece of George Walton, one of the signers of The Declaration of Independence. His mother and father were young and pious Christians, belonging to Shiloh Baptist Church, which still stands on the Semora Road near Milton. Early in life he connected himself with this church and became one of its young leaders. This fidelity to his church continued throughout his life. His education was the best that could be obtained from the local schools of his day. This was greatly supplemented by his love for books and magazines, especially the trade magazines dealing with mechanics. He spent the daytime of his early years between farming and working at his father's mill, and his evenings were devoted to reading.

This young bachelor, a mechanical genius and an avid reader, as well as a hard worker, took over the management of more than fifteen hundred acres of farm-

ing lands as well as the operation of the mills and a general store. However being a man of vision and determination he immediately set about to enlarge his operations. His first step was to build a blacksmith shop to be used for shoeing horses and doing general repair work on farm machinery and household utensils. The shop started using only one man but soon grew so that five men were required to do the immense amount of work that came in.

It was soon learned that many parts of wood were needed in doing the repair work on the different articles. To take care of this need a small woodworking shop was set up. It soon became necessary to increase its machinery to two lathes, two table saws, two assembly tables and with many lesser tools.

But Joe Yarbrough wanted to be more than a repairer of broken and worn articles so he conceived the idea of a foundry. In addition to being a man with a keen mind for handling mechanical items, he was of a creative nature and a good organizer. He selected an expert miller and put him in charge of the grinding of flour and meal. He put an excellent man in charge of the blacksmith shop and another in the wood shop. To aid in looking after his growing business he secured the services of a first cousin, William Yarbrough, as his general superintendent. With this new organization he and William were able to devote the needed time for getting the foundry established and in operation.

The principle of foundry work is simple, but the practice of it requires much skill and special knowledge, much special treatise must be consulted for details of the work. A foundry is an establishment for casting, which consists in pouring molten metal into a suitable shaped mold in which it cools and solidifies, thus forming a metal figure of the shape of the mold. The molds are formed of loam molding sand. To form this mold a pattern is required, usually of wood, and pattern making for casting metal parts for machinery or any utensils forms a spec-



Top row Joseph Joel Yarbrough and his wife Emily Chipman
Bottom row John Bradsher and his wife Mary Webb

ial trade, and persons following the trade must use great care to see that the patterns are formed exactly alike the part of parts to be cast. Most metals can be cast but it was decided to major in iron works for farming implements, as well as household utensils and some toys and ornaments. Scrap or pig iron was melted in a tall furnace called a cupola. Coke, charcoal or a special coal was used for melting and a forced draught of air was required to make the fire hot enough to melt the iron. The molten iron was transferred from the cupola to the molds with the use of a long handle ladle.

Products coming from the foundry are in the rough and while some of them may be used in this rough state, many have to be smoothed or as we say, machined so that they may be made to fit into other parts of whatever is being made. To meet this need a machine shop was added, which contained lathes, power drills, files, and other necessary machinery for shaping and assembling the different parts.

Some of the men from each shop and foundry became experts and turned out beautiful specimens of workmanship in wrought iron, cast iron and wood. Parts of a play wagon, now in existence, made for the eldest son of Joe Yarbrough shows the dexterity of their craftsmanship. The frame of the wagon was made in the blacksmith shop. The wheels were cast in the foundry. The ends of the axle were turned in the machine shop so that they would fit in the hubs of the wheels. The tongue was dressed and fitted in the wood shop. Each workman had his part to do and they all combined their efforts in producing a well made wagon. Likewise they produced plow parts in the foundry and the plow handles in the wood shop. The bolts and nuts were wrought in the blacksmith shop and all taken to the machine shop for assembly.

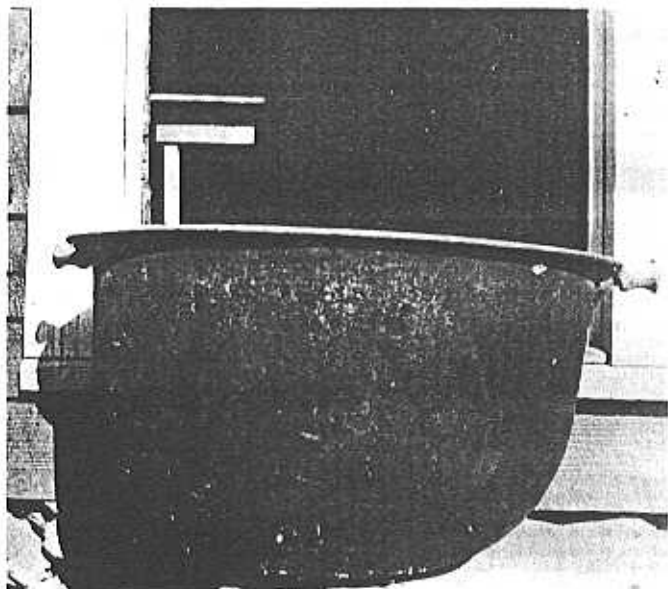
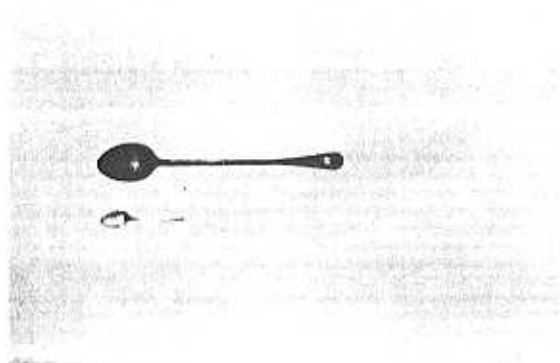
With the set up of three shops cooperating, coupled with the expert workmanship of the experienced men and the general supervision of a master mind the time

same when almost any product of iron, steel, and wood could be and was turned out. Now in existence are some articles or parts of articles that were made here about one hundred years ago. Mrs. Ed Walker of Milton has a heating stove; Mrs. Banks Satterfield of Milton a large spoon; Tom Yarbrough of Locust Hill a forty-five gallon kettle; Mrs. Robert O'Briant of Durham a brass pot and mortar with pestle; E. S. Yarbrough of Durham parts of a play wagon and a frog. The first steel fence around your court house was made and put up by this organization. Many years later it was sent away for repairs and for some reason has never been returned. Caroline McAden of Semora has a coffee mill.

Business increased rapidly and by the early eighteen hundred fifties there was quite an industrial plant, including the three shops, the foundry, the store, the grist mill, the flour mill and the sawmill. The foundry and three shops and store were on the west side of the creek and the necessary power needed was generated by an overshop water wheel on the same side and transferred to the shops by an overhead wooden shaft. This power was supplemented by horse power if and when the flow of water in the creek was low. Many workmen were needed which necessitated the erection of several homes around or near the plant.

In the midst of completing his shops and foundry and putting his organization on a working and paying basis, Joe Yarbrough on October 31st, 1848 wed Rebecca Emily Chipman of Guilford County. He soon erected a home on the hill east of the creek and overlooking the industrial plant.

To this union were born five sons and one daughter. One son lived only two years and the others when not in school had ample time to acquaint themselves with the work in progress. Charles Joel, the oldest son, devoted his time to farming. Joseph Joel, Jr., liked the wood shop and gave his time mostly to making patterns for foundry use. In this work he became an expert. George B. gave his attention



Articles made at Yarbrough's Foundry

and time to grinding flour and meal. Richard took over the management of the general store and was quite successful with it. These sons growing up in the business soon became very valuable assets to their father.

The business grew and prospered steadily until the Civil War broke out. Joe Yarbrough was sent to Salisbury to superintend the manufacture of ammunitions for the Southern Army and was titled Captain. He retained this title and was called Captain Joe Yarbrough the remainder of his life.

During this period of fighting, practically all the men were called into service. With the head of the firm away and labor almost impossible to secure, and all the scrap iron taken over by the military forces for ammunitions the industrial plants suffered almost to a breaking point.

However, when the war was over Captian Joe Yarbrough came home. The boys grew to be men. Labor became more plentiful and working materials were available. The foundry and shops as well as the mills took on new life and soon the problem of distribution arose.

In the absence of railway freight and trucking transportation Yarbrough's Foundry began delivery with a heavy covered wagon. To this were hitched six mules or horses and two men put in charge. Various products of the plant consisting of plows, plow castings, household equipment such as andirons, skillets, lids, pots and stoves as well as many smaller articles of cast or wrought iron were loaded. Each team, and there were several, had a certain territory to cover for the sale of their loads. As they sold they took orders for delivery on the next trip, and picked up such scrap iron as might be found suitable for recasting at the foundry. Time required to make these trips depended on the distance and the load carried. ^{ca. 1860} Some dustribution proved so profitable that the wagons in addition to serving North Carolina went to South Carolina, Virginia and Tennessee.

The operation of the foundry required a vast amount of charcoal for use in the cupola. This need created a new industry in the surrounding country. Many people took up the trade of burning charcoal, which was really stacking a pile of pine wood on ends making a large cone like heap and covering it with wet ashes or sod, leaving holes at the bottom for air to get in, permitting the wood to burn slowly, and an opening at the top for the smoke to escape. When the wood was burned fully it was left for several days to cool off. The ashes or sod were then removed and the charcoal was ready for use. It was hauled to the foundry and sold. Pine trees were plentiful and cheap and very little labor was required in the preparation of the kiln so the burning and selling of charcoal became quite a profitable industry for many miles around the plant.

In the midst of these prosperous times the United States Government, in order to give the community better mail facilities, established a post office in the general store and named it Yarbro in honor of Captain Joe Yarbrough. The office opened for business April 2nd, 1887 and Richard Yarbrough was postmaster.

Captain Joe Yarbrough using his ingenuity contrived many labor saving fixtures for the comfort of the home. He placed on his front gate an opener with which the driver could open and close the gate without leaving the driver's seat. There were no window screens in those days and the flies were a pest. He made an overhead frame for his dining table and fastened long strips of paper to it. The frame could be operated by foot power of one sitting at the table and this moved the strips of paper like a fan and drove the flies away. For bringing water from a distant spring he installed a mechanical overhead tramway which brought the water in a bucket to the back door. Two such carriers are known to have been installed. One at his own home and one at the Stamps' home, now owned by Miss Annie Yancey Gwyn.

Probably the climax of this man's ability came when he conceived the idea of a low pressure turbine water wheel. During a very busy season, the grist mill and flour mill running day and night, trouble developed in the wheels which were furnishing the water power. Captain Joe Yarbrough had long cherished an idea that he could make a better wheel than the ones most in use. He drew his plans, had his shop make the patterns, the foundry cast the blades and the machine shop shape an iron driving shaft. When properly assembled and put in place and the water turned on, he was more than pleased with the results. He quickly made two similar wheels and installed one each for the grist mill, the flour mill and the sawmill. These wheels solved the problem so well that he devoted much of his future time in making and installing them in other mills. This type turbine water wheel has become the standard now being manufactured by the leading water wheel industries in The United States and are the prevailing wheels, not only in this country, but in many of the foreign countries. This very type was installed a few years ago at the Kerr Dam on the Roanoke River. The same type is being installed at the gigantic Niagara Falls Electric plant. However the wheels at the Yarbrough Mills produced only twenty horse power, while those at the Kerr Dam give 60 000 horse power each, and those at Niagara Falls are designed to produce 225 000 horsepower. A note of interest is that Captain Joe Yarbrough designed and made his wheels at his own foundry and installed them, and that one of his great grandsons supervised the installation and connecting the generators at the Kerr Dam, and that the same great grandson and another great grandson are now assisting in the supervision of the mammoth installation at Niagara Falls.

For many years Yarbrough's foundry and mills flourished and did a tremendous business. The plant was probably the outstanding industry in Caswell County and was selling its products in four states. However in 1895 a panic

came. One of the worse that has ever been experienced in The United States. Money was almost impossible to get. Business came to a standstill. There was very little selling or buying. The Yarbrough industries virtually closed down. Very little was done in any of the shops. Even the grist and flour mills were running on short time. The crash had an ill effect on the owner and his health began to fail. He was never able to get back on his feet. When times did get better, more railroads came into existence and other foundries located on the railroads could ship their products and sell much cheaper than could be done by wagon delivery. Captain Joe Yarbrough did very little business in those days and on April 26th, 1896 died and was buried on the hill east of the creek and overlooking the site of his once prosperous industrial plant and community. A few years later his grist mill and flour mill burned. The buildings that once housed the shops and foundry were sold and moved away. The post office, YARBRO, was abolished October 14th, 1904.

Thus came the end of Yarbrough's Mills and Foundry. Today three cast iron turbine water wheels, cast probably more than one hundred years ago, buried deep in the sandland debris, in their original location, are all that remains of what once was a prosperous community. In 1934, with a party, I visited the site and found there one vertical water wheel shaft sticking out above the sand and surrounding shrubbery, but badly bent from floods and debris that had been sweeping the sight of installation.

Captain Joe Yarbrough is gone. No other vestige of his plant is left except the three turbine water wheels buried deep in the sand. But the spirit of this good man who was a genius, lives on in his descendants. One of his grandsons who upon receiving a degree in Electrical Engineering in 1896 from State College was called to Chapel Hill to erect a power plant and install the complete

equipment for the first electric lighting system of The University of North Carolina. In the early nineteen hundreds he settled in Glendale California. At that time business was just getting started in making moving pictures and it was found that a direct current made much better lights than did the alternating current which was the only current available. To meet this need this grandson designed a special machine which consisted of putting an alternating current motor on one end of a shaft and a direct current generator on the other end and produced the direct current that was needed. This type machine is now used entirely by the motion picture industry and is manufactured by one of the largest electric manufacturing companies in The United States. Another grandson, Chief Electrical Engineer for the Phelps Dodge Mining Company at Ajo, Arizona, designed and had complete supervision of the installation of the multi-million dollar electrification of their entire mining plant at that location. He is now retired and lives in Caswell County. A great grandson had complete charge of the installation of the electric equipment at the Kerr Dam located on the Roanoke River.

When our government built the mammoth airport for the Air Force in Africa a few years ago, and was ready to open it for use, the electric machinery and equipment would not operate. Another great-grandson was sent from The United States to Africa to investigate. He was there only a short while before he had the complete electric equipment working smoothly.

At the present time these two great grandsons are assisting in the supervision of the installation of the gigantic electric equipment at Niagra Falls.

A great grandson recently elected to the presidency of the Virginia Society of Professional Engineers, is now Director, Construction Division, District Public Works Office, Fifth Naval District, Norfolk, Virginia and as such, is the chief civilian responsible for construction at naval shore facilities in that District. He is also listed in "Who's Who in Engineering."

Still another great grandson, although yet very young, is in full charge of the public works of one of the large cities in North Carolina.

Other descendants have been successful bankers, farmers, teachers, salesmen, merchants, entertainers and high officials in the armed forces.

Last, but by no means least, the Christian spirit that was outstanding and dominant in Captain Joe Yarbrough's life still exists and is very prominent in the lives of many of his grandchildren, his great grandchildren and great great grandchildren.