Wind Grist Mills of Rhode Island

Interesting Relics of a Bygone Era

Source of Curiosity to the Stranger

At the time when the first settlers came to this country there were only three ways of obtaining power outside of manual labor and animals. These were tide mills, water mills and wind mills, the same as had been in use in Europe for ages.

For some reason Rhode Island seems to have been the only place where these wind mills were used to any extent. In fact, I have never heard of any outside the state, with the exception of one or two on Long Island and one on Nantucket Island, two on Block Island, three or four on Cape Cod, one of which was bought by Henry Ford and moved to Dearborn, Mich., and there is at least one on Cape Cod now, which is run in the summer for the benefit of summer visitors.

There are four still in existence in Rhode Island, one of these is in Jamestown and belongs to the Jamestown Historical. Society, and the other three are in Portsmouth, R.I., ,one of these was moved here from Little Compton about 1880 by the late Daniel Almy, it stands on the East Main road and is owned by Lawrence Thurston. Another one was built in Warren, R I.: where it was used in grinding in connection with a whiskey distillery. It was moved to Fall River, and later was moved to Portsmouth by the late Robert Sherman. When l was about fourteen years of age it was bought by the late Benjamin and William Hall, and moved to Lehigh Hill on the West Road, and now belongs to the Newport Historical Society.

I can remember when there were ten of these mills standing in Portsmouth, Middletown and Newport, two in Little Compton, and before my time there was one in East Greenwich, and another in Bristol or Warren; but old Father Time came out ahead in the race: and only a few are now left.

I have heard my Father say that in the Revolution there was one of these wind mills stood on Prudence Island, and the British soldiers used it as a target to try their cannon on. To the people here on the Island these old mills are so commonplace that they excite very little interest, but to the thoughtful person, or stranger, they are always a source of wonder and curiosity, possessing for him an air of mystery and historical interest, as their moss covered shingles tell him that these old mills form a connecting link between him and his ancestors when they were fighting the wilderness and the Indians to obtain a living in this land of the free and the brave.

At the time these mills were built, the Armours and Swifts and their great slaughter and packing houses had not been thought of; Chicago was a wilderness; the great plains of the west produced no grain; the whole broad expanse was given over to prairie grass and sage brush through which large herds of buffalo and wild horses roamed at will, only molested by the Indians. The steam engine had not got started and a thousand and one other things which we of today think we could not do without had not then been thought of. These things point out the reason for the building of these old wind grist mills. People could not eat their grain whole, the villages and cities depended on the surrounding country for their beef, pork, mutton, hides and wool. It was known that ground grain produced better results than if fed whole, but the streams on Rhode Island were small and produced little power and dried up in the summer, so the old fashioned wind mills of Europe were reproduced to help out.

I have heard my Father say that notwithstanding there were a number of these mills, they were always jammed with grain to be ground for the fattening of beet and pork; also some selected grists to be ground into fine meal for family use, or to be carried to the village or city store to be traded for groceries.

As money was scarce in those days the miller got his pay by taking toll, this came to be regulated by law so that a water mill should take two quarts of grain for grinding a bushel and a wind mill should take one-tenth of a bushel, or about three quarts, it being considered more work to run a wind grist mill; this old custom of taking toll came to an end about 1910.

A Century and a Third Years Old Mill Still Being Run Commercially

I do not know which is the oldest mill now standing, but as the one I own and run, and which is known as Boyd's Mill, is quite old and as my family have probably had a longer experience in running wind grist mills than any other family outside of Europe, it may be of interest to describe our mill and our connection with it.

It was built in the year 1810 by John Peterson, a retired sea Captain; the timber being cut back of Wickford Village on the west side of Narragansett Bay.

The mill building is eight squire and eighteen feet across through the squares, and about twenty feet from corner to corner, tapering to the plate, which is put on in a circle fifteen feet in diameter and thirty feet high. The top, or roof, is round similar to a half sphere and is about eight feet high, making the total height of the mill thirty-eight feet.

On top of the plate is bolted iron segments forming a continuous circular rack gear. The heavy framework of the roof on top of the mill is locked over this circular gear by a groove cut in the frame. This prevents the top from sliding off, but leaves it free to be turned in any direction by a chain wheel and system of gears meshing into the circular rack gear. This chain wheel is on the top and the chain extends to the ground and by pulling on the chain the top can be turned so that the sails will face the wind at all times.

In the framework of the top is placed the bearings for the main shaft, this shaft is wood, twenty-two inches in diameter and nineteen feet long, it is made of Georgia hard pine. The neck, or main bearing, is protected by steel skeins placed around the shaft one inch apart, this space being filled in with wood and then hooped. The rear end of the shaft has a cast-iron gudgeon set into it. About four feet of this shaft is outside the mill to which is attached the vanes, or mill arms, on which the canvas sails are spread.

There are eight of these arms each one 31-1/2 feet long from center of shaft, and when running describe a circle 63 feet in diameter; each arm carries a sail 28 feet long by 7 feet 4 inches wide.

On the main shaft is the main driving wheel made of wood with iron cogs bolted on, this wheel is about 9 feet in diameter and drives a perpendicular wooden shaft by a pinion wheel which turns the upper mill stone by a peculiar clutch which does not interfere with the free balancing and running of the stone. The perpendicular shaft and stone make six turns to the main shaft's one.

When running, the vanes or arms must be kept facing the wind by turning the top as the wind may change. The running stone which is the top one is twenty-two inches thick and five feet in diameter and weighs 2 tons. The lower stone is the same size but not so thick and remains stationary. The corn is fed between the surfaces of the stones by a hole eleven inches in diameter in the top stone. The surfaces of the stones have furrows radiating from the center to allow the corn and cooling air to flow over them. The speed of the arms sometimes go as high as 25 revolutions per minute but is then at the danger point.

The mill when running at 20 revolutions per minute is estimated to develop 30 horse power in a thirty mile wind. There is no way of regulating the speed of the mill in a gusty wind, except to stop the mill and reef in part of the sail, or put it out as the case may be. The sails can be spread from the ground, taking one arm at a time as it points down to the ground. A fair speed is 18 or 20 revolutions per minute. There is a powerful brake on the main wheel by which to stop the mill.

There have been some improvements made in the mill since it was built. Originally it was fitted with clumsy wood wheels with wood cogs. The top was turned by a large wood screw a foot in diameter on the top meshing into wooden cogs projecting through the plate on the body of the mill, forming a crude wooden worm gear. The screw had a wheel over which a chain was placed extending to the ground. By pulling the chain the top could be screwed around either direction.

Some of the first mills were even more crude than this, a long heavy pole was framed into the top and extended at an angle of 45º , on which a wheel was placed resting on the ground. By hitching a horse onto this pole the top and arms could be hauled around to face the wind.

Few of those now living know what a tough job it is to run one of these old wind grist mills, especially in the winter. There were no stoves in them because owing to the revolving top there could be no chimney, and owing to the shape of the mill and its windy position a stove pipe run out the side of the mill would meet fifty-seven varieties of draft, under which no fire could burn; also one door had to be kept open so that the Miller could keep his weather eye peeled on the weather lest he be caught and wrecked in a squall. In fact, the running of a wind grist mill required about the same ability and judgment as a sea Captain, other than he did not have the water to contend with.

It was his business to make a fine quality of meal, but as his power and speed constantly varied in a gusty wind he had to constantly vary the amount of grain flowing between the stones and the weight of the running stone on the grain, and in the midst of it all some farmer's horse would become frightened at the mill and start to run away. Then the miller would have to leave off what he was doing and find the farmer's grist for him and put it in his wagon, while the farmer held his horse and tried to take a reef in his broken harness and wagon.

Many are the days that I have run this mill when the thermometer was down to zero, in a howling gale and snow storm, when one could not see two hundred feet; but the grinding had to be done, and these millers under such conditions had to use all their experience and nerve to turn the power of the wind into ground feed for man and beast.

When the miller was running his mill on his nerve in one of these storms he, like the sea Captain, could not tell whether in five minutes a heavier squall would wreck him, or whether he might be in the midst of a calm. Another hazard of running these mills was in trying to do so in a near freezing rain storm. In ten minutes the sails might freeze as stiff as a board, then he would be at the mercy of the wind as he could not furl his sails. Generally when the mill was not running the sails were rolled up and twisted around the arm and tied. When we thought it was going to rain in the winter we took the sails off, but we sometimes left them on and they got wet and froze up. I have spent may hours up on those mill arms with the temperature down to zero picking out frozen mill sails, or trying to thaw them out with teakettles of boiling water from the kitchen stove.

The Great Gale of 1815

The date at which our family commenced running wind grist mills is uncertain, but I have heard my Father say his Father, the late William Boyd, was running a mill which stood near Bristol Ferry on the day of the so-called Great September Gale of 1815. This gale blew ships from the Providence harbor up into what is now the lower end of Westminster Street. and did great damage through New England, New York State and Pennsylvania.

The wind was light in the morning from the Southeast, but gradually increased until Mr. Boyd was running the mill with bare arms, the sails having been all furled. The wind continued to increase until the mill became unmanageable. Mr. Boyd applied the brake and left it, and about half an hour after the mill was blown to pieces. It will thus be seen that our experience with wind grist mills must date back to about the time when our present mill was built, or 1810. That fall after the Bristol Ferry mill was blown to pieces William Boyd leased, and finally bought, the Peterson mill.

As I have stated, our mill was originally built for grinding feed products, and incidentally family meal, and for years feed grinding was the principal business. But with the development of the West, and its cheap grain and meat products and the increase of manufacturing in the East, it became unprofitable for Rhode Island farmers to continue the old methods of farming, and they went more and more into truck farming instead of raising grain. This change marked the beginning of the end for many of these old mills and they gradually were abandoned and allowed to decay. But there were many people who appreciated the fact that Rhode Island corn, which is of a different shape and color

from any other, possessed merits for making meal for family use superior to any other corn known. It is sweeter and richer, is more delicate in flavor with none of the strong bitter taste found in other strains of corn, and when ground into fine soft meal it can be made into one of the finest human foods, the famous Rhode Island Johnny Cake.

Appreciating these facts and realizing that the grinding of feed was a vanishing industry the Boyd family pushed the Rhode Island Johnny Cake meal business until now Boyd's Johnny Cake meal has become famous, and has been shipped as far away as South America.

The mill was built only 27 years after the Revolution ended, and 34 years after the great Bill of human Rights was signed.

At times when I am in the mill alone and think of the changes that have taken place since my Grandfather ran this same mill, and to which it has been a mute witness, it seems as if the Great Power which causes these ceaseless changes in the universe should endow it with the power of speech, that it might speak in counsel to the grandchildren of those it served so faithfully long years ago.

During the 131 years that this-mill has stood here it has seen humanity come to understand and take advantage of the natural forces and resources of the Earth and the air surrounding it, more than in all previous recorded history.

This old mill has seen the little babe in its mother's arms, with Its big eyes staring in wonder at the mill arms with their white sails swinging slowly through the air. It has Seen this same tot grow into youth and manhood, has seen him become the head of a family and bring his grist of corn to mill, to be ground into sweet Johnny Cake meal to feed his little ones. It has seen his hair whiten, and his step falter, and finally seen him gathered to his fathers. It has seen his sons bring their grist to grind and pass on, and still its big white sails swung slowly through the air as if defying time. It can almost say with the running brook that men may come and men may go but I go on forever.

But so-called human progress has changed all this, electric power has been substituted for wind power, and the wondering eye of the babe will be diverted with fear to the deadly bomber and the murderous automobile.

Contemporary Side Lights

All meal up to 1895 whether sold In the cities or farmers' grists was un-sifted and the house wife had to do it. At this time I invented a power sifter run by the mill. At this time there was an average of 6,000 sheep kept on the island and many hogs November was the time of slaughter, thousands of pounds of pork was marketed in Newport, Fall River, and New Bedford. I have heard my father tell of taking 6,000 pounds of pork to New Bedford in two loads, these hogs had been grown and fattened on the toll he had taken for grinding the farmers' grain. It was an era of salting pork, the making of country sausage, and the curing and smoking of hams for winter use. The farm cellars were filled with all kinds of vegetables, apples, cider barrels and pork barrels. The cribs and barns were bulging with grain and hay to feed cows, oxen, sheep, pigs and poultry.

It was the old New England conception of plenty, with peace on earth and good will toward men; old time fiddlers, and country house dances, (right hand to partner, grand right and left, round the other way, doe se doe). Plowing and carting was mostly done with oxen, nearly every farm had one pair of oxen, and large farms had three or four pairs.

Money was scarce, so the Town was divided into seven road districts with a supervisor for each district, and on a certain day after planting, when there was a slack time before cultivating and hoeing, the supervisor warned each taxpayer that he could come out and work out his tax if he so desired, bring oxen and carts, crowbars, shovels, forks, hoes, chains, plows, and as many of his hired help as he desired.

There was fixed rates to pay per hour for men, oxen, carts and tools, and even boys. All this was part of the business done at the annual Town meeting, the finest type of government ever set up by man, every man was a free man, and a dictator of his fellow man by argument until the polls closed, Then the majority ruled until the next annual Town Meeting. The school Districts conformed with the road Districts.

There were cattle drivers and traders, also horse traders with whom the farmers traded or bought and sold their livestock. This was an eye tooth cutting, buyers beware process, in which one learned a lot about human nature, and it helped to develop the Yankee shrewdness for which New England became famous. I knew some of these cattle drivers, one of them a man by the name of Dean, who was a regular cattle driver, going through the towns with droves of from a half a dozen to fifty head, good, bad and indifferent. Sometimes one could hear him coming before you could see him, or his cattle, hollering, "Git along thar, what's the matter on ye?" He was about as shrewd as they come.

One day he was driving a large herd along the road when he stopped to talk or barter with a farmer, with the result that his cattle got a mile or so ahead of him with no one to look out for them. They spied a large field of cabbage, and as the road wall was poor the whole herd was soon in the field eating sauerkraut to beat the Germans. The farmer who owned the cabbage soon saw them, and by the use of his most choice cuss words managed to get them back into the road again, and with wrath in his bosom, and blood in his eye, waited for Dean.

Dean soon hove in sight and taking in the situation at a glance he knew that the farmer might have a case at law against him for damage. So he decided that the best defense was to attack first, and before the farmer could get started Dean started hollering at him and damning him up hill and down, and telling him that he expected half his herd of stock could die as a result of stuffing themselves with cabbage, and that if they did, he would bring suit against him for damage, as he was to blame for not keeping his wall up. While the farmer did have a claim against Dean, Dean frightened him out of it, and he begged Dean to drop the matter and he would stand the loss of his cabbage. It is needless to say that Dean did not lose any of his stock.

By a curious flow of human events it turns out that I, through my mother, am a descendant of Nicholas Easton, one of tile founders of Portsmouth, RI, and that his son, Peter Easton, built the first wind grist mill in Rhode Island, and the last of these old mills to run by wind was that of the late Edward W. Thurston about 1924. It was the end of an industry and trade. I have farmed it all my life and have turned the black dirt of Old Mother Earth into wheat, rye, oats and barley to be ground into feed for livestock, and as I have baked many Johnny Cakes, I have literally turned the black dirt of Old Mother Earth into one of the finest food products known to man, the Famous Rhode Island Johnny Cake; ground by the power of the free air, which is the only thing that is free today.

Man, - Dust thou art.
Johnny Cake, - Dust thou art,
and to dust thou both shall return.

I have made all the repairs on this mill since I was eighteen years of age. I know how to build one of these mills, and in 1901 remodeled our mill from a four armed mill to an eight armed mill. It was the wonder of all who saw it, and there never was one like it stood on the earth since Adam was placed in the Garden of Eden. It was an experiment like Noah's Ark, and only one of these was ever built.

It is doubtful if there will ever be another of these wind grist mills built in this country. The timbers and boarding in the lower stories of these old mills is full of rusty tack nails, where notices of town meetings, auctions, and other notices have been tacked up, and the old blacksmith shops were used the same way. They were the public forums where news, politics and scandal were debated. There used to be four or five of these shops in Portsmouth, now there is not one.

It was the old fashioned horse and buggy day
The day of a lad and a lass in a jingle be1l sleigh,

With a blush on her face from the tingling breeze
As his arm slipped around her for a little squeeze.

One of these blacksmiths, the late William Earl Cook shod my horse on his ninetieth birthday, he passed away at the age of 105 and never heard of a vitamin, but there were five generations living in his family before he passed away.

The blacksmith shops have disappeared and there has not been a notice, or circular, tacked up in my mill in years.

The old time fishing business of Portsmouth and Tiverton has nearly disappeared, and the common sense country mind which once governed our country has now changed into the jazz and mob of our cities.

What I have written here is history. I know wind grist mills from the ground up. When I was four years old I was struck on the head by one of the mill arms and picked up for dead; and when I was 28 years of age I went up on an arm to fix a sail, I did not put the brake on but braced the arm against the ground with a stick. The stick jarred out and the mill started, and I went sailing through the air, around and around. I barely managed to twist my arms and legs around the slats. I had to hang on in all positions, and every time I went over the top of the circle I was head down 45 feet from the ground. My Brother Edward was up in one of the fields digging out rocks. I hollered to him and saw him start on the run, then I closed my eyes and paid all my attention to hanging on, and tried to ignore the fact as to whether I was head down or sideways. It was a matter of keeping my head, and holding 150 pound of dead weight to that slat work until my Brother got there.

It was estimated I went around thirty times. My brain has been in a whirl ever since, cause and effect.

But why go on?

Mankind today stands on the brink of the greatest disaster and tragedy in all recorded, or unrecorded, human history.

The mills of the Gods grind slowly
But they grind exceedingly small.
While mans wind mills and ambitions vanish
And Death takes the miller as toll.
All is vanity and vexation of spirit.

Benjamin F. G. Boyd
Portsmouth, R.I.
January 6th 1942