Gray's Mill: Mill by Paul Gay

TITLE OF THE MILL SUBSEQUENT TO THE TABER FAMILY

The next deed (T.C. 40-258) is one conveying a moiety interest from a Philip Tripp of Fall River to one Nathaniel Gifford of Little Compton in 1836. This deed mentions the Mill Pond, Saw mill and Grist mill, "near Adamsville". Nathaniel Gifford then sold in 1846 (13-445), with the same description, the land and mill to a John Washburn and Albert Nichols, both of Cumberland, R.I. Washburn, in 1854, conveyed (27-167) the property to a John Church, together with: "the Saw and Grist Mills & Carriage Makers shop standing on the premises, with the utensils belonging to the same." This is the first time that a "carriage makers shop" has been mentioned. The next conveyance (103-478) is from a John Church Jr. and other heirs of John Church late of Little Compton to Philip J. Gray dated 1883. This deed mentions the "A saw and Grist-mill and a Carriage Makers Shop". Since the mill was now owned by a "Gray", it seems likely that it soon became known as "Gray's Mill", its current name. (What had it had been called for the interim 90 or so years subsequent to its passing from the Taber family?) The mill in 1939 was transferred to Marion E. Hart and John A. Hart (819-141), and was then held by them until conveyed to Ralph C. Guild, its present owner, in 1980 (1805-1155).

GRAY'S MILL - PHYSICAL EVIDENCE

Gray's mill was run continuously by John Hart from 1920 until he sold it to Ralph Guild in 1980. Ralph Guild had the mill extensively restored in 1980-81. The work was done by Anne Baker, and appearances indicate that efforts were made to preserve the historical integrity of the building. Many of the original structural components and materials were badly deteriorated and had to be replaced. It appears that such replacements were carried out carefully and with a sensitivity toward original types of materials, and methods of construction. Work was also done by Elliot Taber, who is well known and respected for his traditional stonework, to the stone wall of the raceway. The turbine which had not been in use for the past 25 years was badly rusted and not salvageable. Also, the original spillway across the Adamsville Rd. was completely replaced. During the excavation, remains of the original spillway were found, and the new spillway was constructed based, at least in part, on this information.

The building as it now stands is composed of what appear to be two separate buildings joined together to form the existing "L" shape. The shape of the foundation and the fact that the south part of the building had shingles on the inside of its north wall both point to the fact that the north part of the mill preceded the south part. Leonard Waite, who is son-in-law to John Hart, said that the south part of the building was always called the "wheelwright's shop", and that it was added on to the mill proper.

This may be the same building as the carriage makers shop that was conveyed to John Church, along with the Saw and Grist Mill, in 1854. The carriage makers shop was not mentioned in the prior 1846 deed. It has also been said that the carriage makers shop was where Brayton's garage is now located. The mill buildings contain evidence of both circular and vertical saw marks and as such are not reliable indicators of age, except that those members with circular saw marks are probably not older that the early 19th century.[28] In general, the buildings give the appearance of being constructed using whatever materials happened to be available at the time. This effect may be due, in part, to the materials used at various times for repairs. It is difficult if not impossible to distinguish between original materials, and those added as a result of repairs.

The saw mill that is mentioned in all of the earlier deeds is no longer standing. John Hart said that this building was sold and moved away (doesn't know where) around 1920 when he first began running the mill. Parts of the saw mill foundation are evident adjacent to the north of the mill. A car lot and garage abut the mill to the north and the parking area comes within a few feet of the existing mill buildings, covering over the original location of the saw mill building. Since the remaining stones of the saw mill foundation are below the grade of the parking lot, parts of the old saw mill foundation may still be intact under the surface of the parking lot.

At least three photographs of the mill and surrounding area exist in a series of photographic postcards made by a photographer named O.E. Dubois of Fall River ca. 1910.[29] These postcards are contact prints of the original negatives, and although postcard size, are fine grained with excellent clarity and detail. Although the angles of view of the postcards showing the mill are not optimum, the mill buildings are shown. The saw mill is shown having vertical board siding and appears to be attached to the north end of the existing mill building. The photograph #1225 of the northwest corner of the saw mill shows a structure protruding from the roof of the saw mill which may have been a part of the machinery. The north side of this building appears much darker than the north side of similar adjacent buildings indicating that it might possibly have been open, although this would have made it very cold in the winter. Any large opening such as for the movement of logs, couldn't have been on the other side since the grist mill abutted there. Just barely visible, the appurtenance to the roof of the saw mill is also shown on photo #1224, just above the wood gate in the wall. While it appears that the saw mill was connected to the grist mill, no physical evidence seems to exist indicating the connection, other than the proximity of the foundation. The south mill building is the only other of the mill buildings visible in these photos, and it appears as it does today.

Utility poles are shown along the streets, but since electricity wasn't available until 1927 they were for telephone service. It appears that either the grist or the saw mill had telephone at this time. Photo #1225 shows a pile of wood in front of the mill. This was probably scrap from the saw mill used for firing a wood stove for heat. The stone walls on either side of the road appear much as they do today. The building in this photograph on the extreme left, with the man in the doorway, was the old blacksmith shop, now Brayton's garage. This building is also visible in photo #1224 just to the right of the gate. Photo #1235 is a view looking across the mill pond. Beginning at the left, it shows the spillway, the blacksmith shop and the saw mill. The rest of the mill is hidden behind trees. This photo has leaves on the trees while the others seem to be taken in the winter. There also seems to be quite a lot of vegetation in the pond in the foreground.

This series of photographs taken by Dubois contains several others of the Adamsville village. In viewing these one is struck by the multitude of accessory buildings that existed at the time. Among these buildings were barns, livery stables, ice houses, storage sheds, coops and many others. Some are shingled with wooden shingles on both the walls and roof, while others have clapboard siding or vertical board siding. All of these buildings were at one time necessary for the maintenance of the economy and standard of living of the times. These various structures are reminders of another era when the transportation of goods and the availability services had not achieved the levels of sophistication that they have in the 20th century, especially after the introduction of the automobile and truck. These buildings are visual reminders of the degree of self reliance that was necessary at the time. Leonard Waite remarked that when the town began taxing these buildings in the middle of this century, people would let them fall down or even tear them down so as not to have to pay the property tax on them. The unfortunate effect of such a political policy has been that of destroying much of the valuable material evidence of a culture that few of us may ever have the opportunity to appreciate.

THE MACHINERY

The grist and saw mill was last powered with a horizontal scroll case wheel. There does not seem to be evidence of an earlier wheel, although the mills would have to have been powered with an earlier type of wheel prior to the middle 19th century. John Hart said that the original scroll case, which he calls the "curbing", was of "wood tongue and groove boards held together with iron rods". During the 1938 hurricane salt water flooded the mill site and caused the original scroll case to "rust out" (probably the metal fasteners and reinforcement). Just after that John Hart had "Potter", a local metal shop at Central Village," manufacture a new scroll case out of steel plate using the dimensions of the original wood scroll case. This scroll case wheel was used until ca. 1960.

The scroll case was a product of what Safford and Hamilton call the "cut and try" period .[30] This was a time when wheels and turbines were manufactured in quantity, but with little regard for efficiency and quality. As a result many poor designs were produced. Such production was an attempt to imitate, at lower cost, the operation of the more expensive, and more efficient, turbines that had been developed at the time. While the efficiency of the scroll case turbine approached 70 percent at full gate, at part gate settings the efficiency was poor. Scroll case wheels were manufactured from 1850 on. Safford and Hamilton[31] show a Warren Scroll manufactured in 1860 by the American Water Wheel Co. in Wareham, Mass. that is identical in appearance to the scroll wheel removed from Gray's mill in 1980. Since the scroll case wheel must have been installed sometime after 1850 and more likely after 1860, then the first owner of the mill that could possibly have installed it would have been John Church who owned the mill from 1854 to 1883. The scroll case wheel could also have been installed by Philip Gray the next owner of the mill. The installation of the scroll case wheel is important because the transition from the traditional water wheel that would have run the mill prior to the change would have required major changes in the structure of the mill.

In design, the wheel used in these scroll case turbines was a copy of the early Francis inward flow wheel. While the original wheel no longer exists, Ralph Guild (current mill owner) has had a copy made out of cast iron, the same material the original. According to Tim McTague, who is the miller and who measured the original wheel for reproduction, the original wheel was made using two major castings, both iron; the upper casting shaped like a disk, and the lower casting shaped like a large flat washer. Each of these castings had slots, or mortises, in the inner surfaces into which the blades fit. The curved iron blades were sandwiched between the two castings which were then clamped together by bolts. This wheel was enclosed in the scroll case and the whole operated submerged under water in the wheel pit or tailrace. The wheel was horizontal and the power shaft vertical, the whole resembling an upside down "T". The lower under water end of the vertical turbine shaft ran in a Lignum Vitae bearing, with the water itself providing the lubrication.

In appearance, the scroll case is shaped like a question mark lying on its side with the water entering the base and with the wheel in the curved part. The case is designed to impart a whirling motion to the water just before it enters the wheel. This whirling motion (see appendix A) increases the angular momentum of the water, and allows the wheel to be more efficient in extracting energy from the moving stream. The water enters the outside perimeter of the wheel and exits at the center in a downward direction where it then flows away in the tailrace. The actual path of the water through the wheel accounts for the name "inward flow wheel".

Gray's mill has two mill stones, a granite stone and a French Burr stone. At present only the granite stone is running. The two iron bevel gears that change the direction of the power shaft from horizontal to vertical to drive the stone both have 56 teeth causing both shafts to run at the same speed.