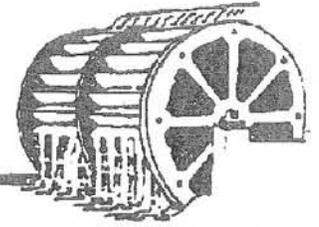


# MILLWORK



Winter/Spring, 2002

Copyright ©2002 Hanford Mills Museum

Vol. 16 - No. 1

## What's News?

**Steam Moving Forward - Slowly, but Surely** - Museum staff and board members are working tirelessly putting the finishing touches on the workplan for the steam restoration project. Troy Boiler Works in Troy, NY are waiting for the okay to begin work on fabricating a new boiler for the project. There is an amazing amount of planning that goes into a project of this magnitude. Hanford Mills Museum is forging a new path,

*When our project is completed the mill will again have this majestically tall smoke stack.*



since we not only have to do things up to modern codes and regulations, but we also want the boiler and engine to look and act like the historic originals. When the Hanfords ran their steam engine they did not worry about emissions laws or visitor safety. On-site work will begin in the late spring, so visit the museum regularly to inspect our progress.

**Moving Archives Makes Room for Visitors on Site** - In an effort to make more space for visitor workshops and meetings, the

museum is moving its archives from the Hardware Store in the center of the museum site to the room behind the East Meredith Post Office (for anyone who has visited during the Ice Harvest - it's the Soup Kitchen). In the past, most of the Hardware Store has been off limits to the general public. The new room will provide space for school groups, various special events programs and meeting space. The original hardware shelving will provide spaces for rotating exhibits, so the room can be open to visitors when not occupied by a program. The Hardware Store will be fitted with a ramp and handicap bathroom, the third such facility on site.

The archives also gained in this move. They will now be housed in a larger, better lit space. Since the building houses the Post Office and staff apartments, we'll know about heating problems sooner. It will be also more convenient for curator and visiting scholar access and use.

*Con't. on page 8*



*The work to prepare the new room was done by Wayne Chambers and his crew from the Delaware Co. Office of Employment & Training.*



## 2001 Collection Donations

Hanford Mills Museum would like to thank the following people for donating artifacts and documents to the Museum's historic collections in 2001.

Elizabeth Botting  
Harry Callahan  
Sandra Hanford Davis  
Marvin & Kay Glass  
John Hamilton  
Ruth Kathmann  
Douglas Lobdell  
Phyllis Scofield Mullineaux  
William & Hazel O'Dell, Sr.  
(in memory of William O'Dell, Jr.)

David Pollack  
Roger Ree  
Thomas & Susan Sikes



## In This Issue:

What's News?	Page 1
2001 Donors	Page 1
Iceboxes	Page 2
1920s Electricity	Page 3
School Programs	Page 4
Animal Power	Page 5
Up-coming Events	Page 8
May Day Festival	Page 8
The Howland Mill	Page 9
Volunteering	Page 11
Looking for Guides	Page 12

# The Evolution of the Icebox

by Rebecca Palmer, Museum Intern

*Editor's Note: Rebecca has been doing a Spring Term internship through the State University of New York at Oneonta. Besides learning about iceboxes, she helped during the Winter Ice Harvest, was a judge for the Regional History Day and she has been learning about cataloging museum artifacts, textiles and archival materials.*

Now that the Hanford Mills Museum Winter Ice Harvest festival has passed and the ice has been put into the ice house, some may wonder what happens next. Here at Hanford Mills, the ice is kept in the ice house until we make ice cream in July. When the Hanfords were living, the ice had more practical uses in breweries, in creameries, private homes and butcher shops. The use in homes did not become a possibility until icebox manufacturing began in the mid-1800. The icebox, also referred to as a refrigerator, was able to keep food fresh longer than previous methods. One of these earlier methods was a cold spring and storage room under a house. D.J. Hanford used this method until the ice house was built at the beginning of the 20th century.

D. J. Hanford's home was built over a spring that ran through the basement of his house. From Richard Stinson's memories of his visits to D.J.'s house, we know that the spring was open and used to store food. When D. J. Hanford passed away, his son, John Hanford, bought the house and the

farm. From pictures taken of the property and the town, we know that he had the ice house built between the years 1902 and 1910. John built the icehouse to store ice for the production of his dairy goods. In 1909, John Hanford moved D.J.'s house one plot over

John built the house. Not only was it similar to the first crude icebox made in 1793, but it also included innovations made in air circulation. In the mid-1800's, it was discovered that the ice should be above the food since cold air travels downward. Another icebox im-

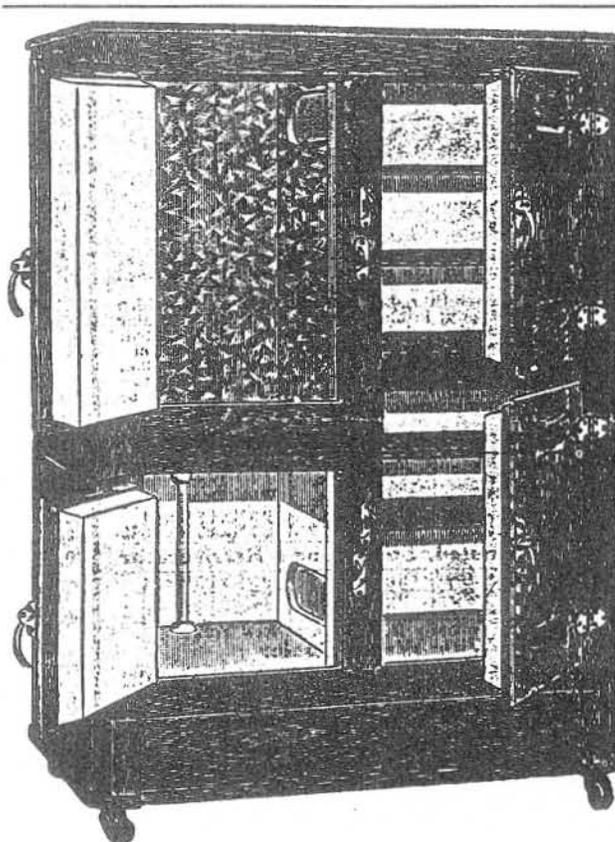
provements were the removable sides that were patented in 1882. This permitted the metal that is closest to the ice to be removed and cleaned easier than earlier models.

The first manufacturer that is known to us is D. Eddy and Son of Boston, who started production in the 1840s. A couple dozen companies were in operation by the end of the 1800s, and most of these companies were prosperous. It was during the beginning of the 20th century that the icebox business took off and really affected a large portion of the country. For example, in the 1800s, one company produced 10 to 15 refrigerators in one day; by April of 1929, they were making 2,500 iceboxes a day.

In the early 1900s, it was possible that the Hanfords could have bought their icebox from

one of the numerous catalogs that the manufacturers were using. Each business had to find ways to make their product appeal to the customer and stand out from the other manufacturers. Some manufacturers stated that their refrigerators were better made, while others stated the different conveniences of

*Con't. on page 7*

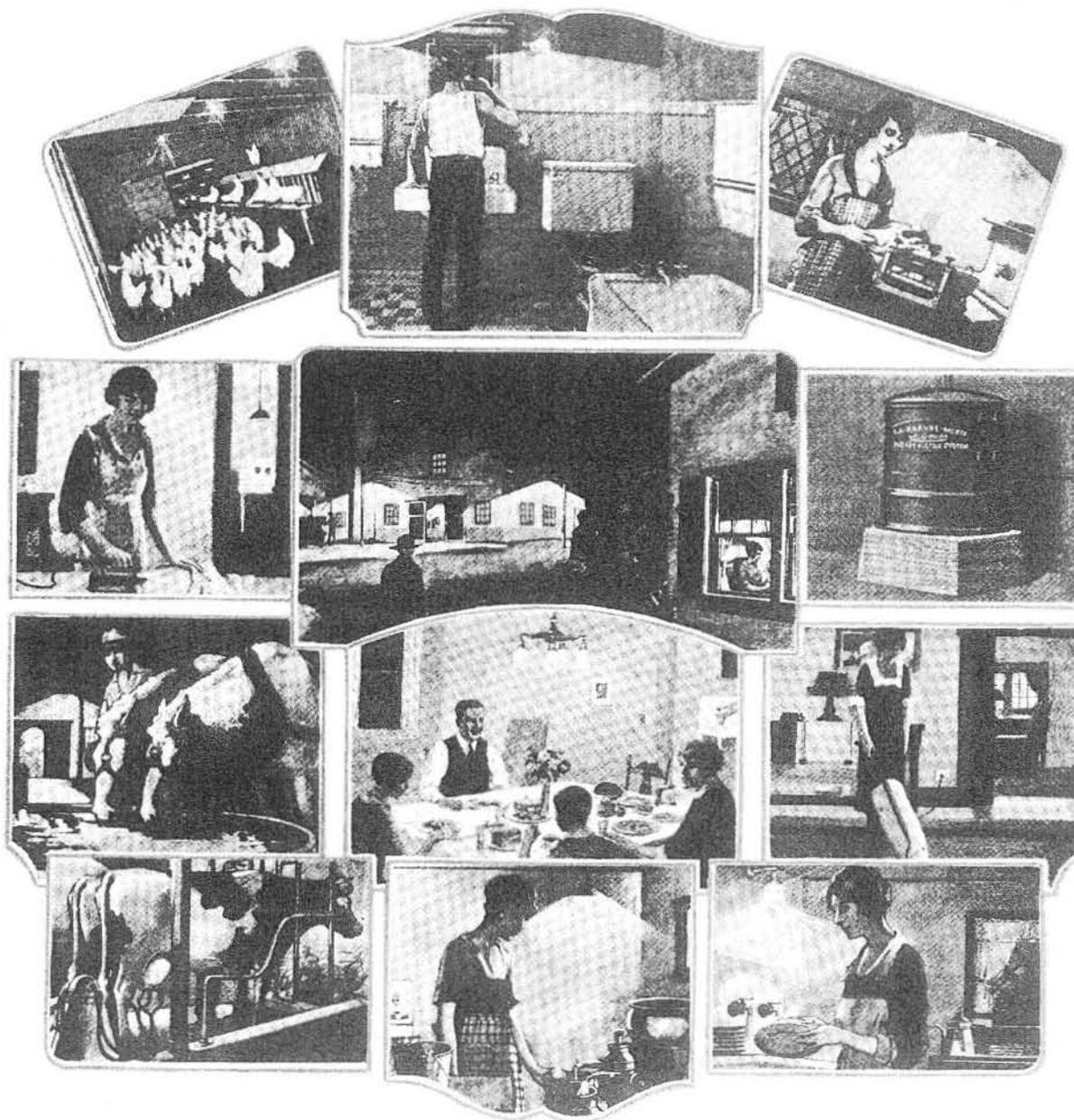


*Refrigerated Iceboxes do not look much different than today's electric refrigerators, but there are obvious differences. You could not freeze food in an icebox. The ice went in the top left compartment in this model. Note the drain pipe below.*

and built his own house there. With John closing the spring off in his new house, it is likely that they used an icebox for cold storage. In addition, there was an icebox found in the house when it was bought by the museum, which could have belonged to the Hanfords.

The icebox that was found was typical for the early 1900s when

# From the Collections: Fairbanks-Morse Home Electric Light and Power Plants



What a difference the home electric light and power plant makes! Work made easier. Home life better. More contentment, more satisfaction, more *real* living!

*Editor's Note: This illustration comes from a 1927 brochure for gasoline-powered electric generating plants. The brochure states: "With your own electric plant ... you can have happier days and brighter nights; you can have the good things, the necessary conveniences that make home life attractive*

*to the young people and a source of satisfaction and pride to yourself. Mother's work would be free from back-breaking drudgery. Everybody's health would be protected. Your farm home would be happier; fire hazard would be lessened; property values increased. That is what a Fairbanks-*

*Morse Home Electric Light and Power Plant offers you!" Doesn't it make you think you have the wrong kind of electricity today? Maybe we should go out and get a Fairbanks-Morse power plant. This is one of the many catalogs the Hanfords used when ordering products for their customers.*



# Spring School Groups at the Museum

by Sara Sikes, Museum Educator

Spring is on its way and that means school groups will soon be visiting the Hanford Mills Museum site! Each year approximately 1,500 students and teachers make their way to Hanford Mills to take part in a variety of interactive education program.

There are five different school programs offered throughout the months of May to October. Each of these workshops includes a tour of the mill, viewing of the waterwheel and demonstrations of working machinery. *The Working Mill* focuses on the historic mill, and the tour can be custom tailored for students in kindergarten through college. *The Mill and Its Community*, for grades 1-3, explores the Hanford Mills Museum site and includes a historic role playing game. In the Community Game, each student is given the identity of a person who actually lived and worked in East Meredith. The class and their guide then discuss the interdependence between the mill and the community, and the change in this relationship over time. One of the most popular workshops for 4th-12th graders is

*Exploring the Industrial Age*, which includes a tour of the working mill and hands-on activities such as two-man sawing and log rolling. These activities are also introduced in the *From Pine to Package* program, which explores the processing of raw materials into a finished product. This workshop is designed for students in grades 4-12. In it, they are given an opportunity to build a wooden packaging box, as was produced by the Hanfords. *Waterpower & the Mill Environment* is also geared for grades 4-12. This program offers a demonstration of the mill's waterwheel and working machinery collection, a chance to use historic lumberjack tools and a science experiment in the headrace of the millpond. Using a floating bottle and stopwatch, students measure the rate at which water flows into the pond. The formula they use was included in the Fitz waterwheel catalog and was likely used by the Hanfords when they ordered their 1926 waterwheel.

In addition to the above workshops, Hanford Mills Museum offers two seasonal programs, *Field to Feed* and *Ice Harvesting*. For the

fall only, *Field to Feed* gives 3rd-12th graders an opportunity to try their hand at corn harvesting and shelling and grinding dried corn. They are also introduced to the historic gristmill on-site. Although the mill is closed for the winter months, school groups are welcome to come and participate in our *Ice Harvesting* school programs. Weather permitting, *Ice Harvesting* workshops are offered in the weeks just before the museum's annual Winter Ice Harvest. Students in grades 4-12 are introduced to the history of ice harvesting through a slide show, vintage films and a tour of the museum's artifact collection. The participants are also given an opportunity to try hands-on ice cutting activities on the mill pond.

A typical visit to the Hanford Mills Museum site usually begins at 10:00 am with a brief introduction to the day's program and a viewing of the orientation video. The students are then divided into smaller groups and lead on separate activities by a museum guide. These might include a demonstration of the machinery in the mill, hands-on activities, such as crosscut sawing and log rolling, and a tour of the John Hanford Farmhouse. Around noontime, there is a break for lunch outside in the picnic area (or inside if the weather is bad) and time to shop in the museum store. The students are typically on site for three to four hours, and the programs range in price from \$2 - \$4 per student.

Reservations for school groups must be made well in advance and the spring dates fill up quickly. To schedule a tour or request a copy of our new education brochure, contact Sara Sikes, Museum Educator, at 607-278-5744.



*Two school children put their backs into their work. Most children who visit the museum with a school group in the spring will be able to try the museum's two-man, cross-cut saw. They soon find out, it's not always as easy as it looks.*



# Muscle Power - The Original Power Source

by Caroline de Marrais, Asst. Director/Curator

When visitors come to Hanford Mills Museum they enjoy seeing the sawmill and other machinery at work, but what *is* the real star of the show? Most people remember the water wheel. Most pictures drawn by visiting school children include the water wheel. What is a mill, or *any* manufacturing business for that matter, without a power source?

Hanford Mills Museum seeks to show power at work. No one forgets the water wheel and presumably they will remember our steam engine once it is in operation. Yet people should not forget that Hanford Mills Museum also demonstrates the oldest power source of all - muscle power. Even as Hanford Mills' water wheels and engines drove it through the Industrial Revolution and into the twentieth century, muscle power - of both human and animal origin - still had a large role in the history of the mill and surrounding farms.

Despite the innovations humans were continually making, especially during the Industrial Revolution, mill workers still had to rely heavily on their own power. The most obvious place we find human muscle power is in the woods, where loggers were at work for the mill. Motorized chainsaws were not introduced until about the 1920s. In this region, chainsaws were not often seen in the woods until the 1940s or 50s. That meant for more than one hundred years in East Meredith's history, all trees were cut down using crosscut

saws and axes operated with human muscle power.

Cutting down a tree was not just a matter of whipping out a saw, cutting through the diameter of the tree and yelling "Timber!" It required cutting a wedge on the side the logger wished the tree to

fall, and then cutting the tree away on the opposite side. Remember the old adage - "firewood warms you twice - once when you cut it and again when you burn it." Logging was muscle power at work and hard work, too!

Once the logs reached Hanford Mills, by one form of power or another, a lot of human muscle power was still involved in their handling. Mill workers rolled logs onto the sawmill carriage. They used cant hooks and peavys to provide the advantage of leverage, but it was still hard, muscle powered work. Once logs were sawn into lumber with water powered machinery, muscles came back into play. Wood had to be removed from the mill and stacked in the yard or lumber shed to dry. Once dry, they brought the lumber back into the mill - human muscle power again - and moved it from

machine to machine as it was processed into the required product. Once a product was completed, muscle power removed it from the mill again. Henry Ford's machine powered assembly line was unknown here; all lumber was moved by hand.

Hanford Mills has accident reports to prove the amount of heavy, hand work done on the site. By the 1920s, the mill was reporting accidents to insurance companies and eventually the state. Cut fingers and bashed toes were the usual accidents (examples of clumsiness and interactions with machinery). Still, we also see strain-related accidents, a result of the use of human

muscle power. In 1941, Russell Aldrich reported that he:

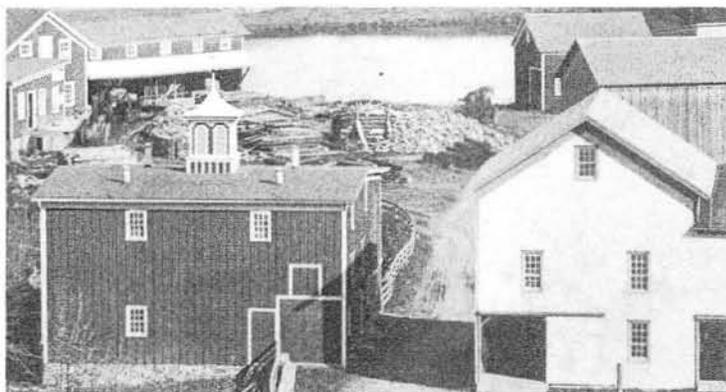
**"was loading 6 bags cement from warehouse to truck and claims that he was seized with what he termed a 'crick' in the back when lifting a bag of cement."**

Even small bags of cement weigh eighty pounds and the mill may have dealt in larger bags. The strain accident affected his back and leg - the claim was allowed. Unfortunately, accidents caused by work strain are harder to prove than most other accidents. In 1936, Arthur Hamilton claimed his detached retina was caused when:

**"lifting on a log on sawmill carriage and strain from lifting seemed to cause an injury to left eye impairing the vision."**

It appears the Hanfords tried to

*Con't. on Page 6*



*At first this looks like another picture of the millyard, but note the silhouette of a horse on a treadmill in the right/center background.*

*Muscle Power - con't. from Page 5*  
 help with the insurance claim, but the claim was disallowed. Today we know that detached retinas occur more often in older people, especially if they are nearsighted (Arthur was 62). We do not know if Arthur was nearsighted, however, the risk can increase if the person is physically very active or does heavy lifting. It is very likely Arthur Hamilton's injury was at least exacerbated by the work he did at the mill.

Perhaps the most spectacular examples of muscle power, though, are the animals the Hanfords and local farmers used to help them with their work. People typically think of horses when they talk about animal power, but other animals were also used in the East Meredith area. Oxen and dogs were two other common sources of power.

Oxen are castrated male cattle. Due to this operation, oxen are calmer than bulls and easier to train. Oxen usually grow larger than their already large, bull counterparts. In early East Meredith history, heavy work at the mill and on local farms was often provided by teams of oxen.

Oxen have several attributes that made them the power source of choice in the early history of a settled area. First, oxen are slow, steady power. The best example comes from research done on the history of the Oregon Trail. For that trip across the continent, it has been determined that a team of oxen could pull a wagon 15 miles a day on an average road. A team of horses could travel approximately 20 miles in that same time. Oxen

were the draft animals of choice, though, because the road to Oregon was not average. More often than not, the road was covered in knee-deep mud. Oxen are strong and willing to work. A well trained team of oxen will continue to pull or try to pull until they are told to stop - they do not give up. A team of horses might pull a wagon faster on a good road, but they will also refuse to pull if they try and think they cannot do the job. Unlike horses, oxen were also less likely to run away.

A final advantage to the ox was the cost of upkeep. An ox team's harness consisted basically of a beam across their necks held on with wooden bows. A horse team's harness could be nearly as sparse, just a collar for each horse, but was likely more complicated. Collars and harness required a harness-maker, not

keep horses. As the Industrial Revolution progressed, life became faster and the speed at which work could be done became more important as new mechanical power sources became available. People did not have time to wait for oxen to finish their work. The horse became the muscle power of choice. They were faster and more versatile - a horse could be used for different jobs.

Most everyone is familiar with the horse's use for transportation. On Saturday, a farmer could use a horse team to plow his fields and Sunday, use that same team to take his family to church. While some families, like that of Margaret Parris Schmitt, have early stories of traveling to church behind an ox team, this was a rare occurrence. Besides the usual wagons and carriages, horses provided muscle power in other ways. Horses were

the farm tractors of the mid-1800s to the mid-1900s in East Meredith. They provided the power for plows, harrows, planting machines and harvesting machines. In the plains states, large combine machines required up to twenty-five horses or mules at a time to pull. While local farm equipment did not require that much power, some reapers required at least three horses.

The Hanfords, of course, kept horse teams

for the transportation of their products, both incoming and outgoing, but they also kept horses for a different type of power. There were situations where a farmer, logger or miller needed a standing source of power to turn a stationary machine. The invention of steam and gasoline engines were perfect for this work, but before these



*This photograph, taken in the 1890s, shows a farmer who was obviously proud of both his horse and ox teams. By the 1890s, most farmers did not bother to keep oxen.*

a carpenter, to make them. Oxen were also easier to keep in terms of food. Oxen can live and prosper on a diet of grass or hay, while working horses require that, plus expensive grains.

As the East Meredith region became more settled and farmers more affluent, ox teams began to disappear from the countryside. Farmers could afford to feed and

*Muscle Power - con't. from Page 6*  
engines were commonly used, horses provided the power, walking on stationary treadmills or turning sweeps. The Hanfords kept horses for treadmill work.

They were specially trained, since horses do not naturally like to climb on a boxed, inclined plane.

Treadmills, or "animal powers" as people called them, were made for one, two and even three horses at time.

Farmers used treadmills to power threshers, various types of mills and butter churns. The Hanfords used treadmills to power drag saws (and possibly buzz saws)

in the woods and in the millyard. The horse walked on a wood and chain or wood and leather conveyor. The horse's feet moved the conveyor, which in turn powered a wheel or pulley that could be belted to whatever machinery the operator wanted to use.

On a smaller scale, farmers also used dogs, goats or sheep to power smaller treadmills. These ran butter churns and other dairy machinery. Dogs were a fixture on East Meredith butter producing farms before the turn of the twentieth century, when the railroad



*Churn dog Rover, c.1895, with his owner, Levi Hanford, and one of Levi's grand children.*

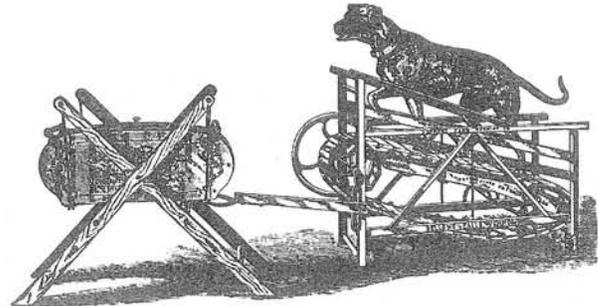
caused farmers to stop shipping butter in favor of raw milk. Elizabeth Hanford noted the death of their churn dog with sadness on July 10, 1886, "We lost our Old Dog Rover a Pet for us all & our Churner. Sick three week." Churn dogs were also specially trained and not all dogs "liked" to churn as Elizabeth found out: July 15, 1886 "[Fred Hagar their hired man] & Charlie went to Hope Turners to get a Dog to Churn" and on July 17, 1886, "Levi took the Dog back to Turner did not like to Churn."

These dogs were so important to the Hanford family that they appeared in photographs, labeled with their name and their occupation of "churner."

In the end, unfortunately, modern engines took over much of the work of animal power.

There are some people who might feel some sadness when a favorite sports car or power boat engine dies. It still does not reach the height of affection that Rover and fellow "churners" earned. The occasional milk or ice delivery man had a horse that knew his job and helped by

following the route while the delivery man went house to house. What delivery truck can do that today? Besides this companionship of work done with a friend or compatriot, horse and oxen owners had the added bonus of manure for their gardens and fields. No running to the gardening store for a bag of fertilizer. In many cases, animal power was better for the environment, except in situations where too many animals were housed too close together (in cities, for example). Last of all, there was the slower pace of life that animal power provided. A slower pace might be considered good or bad, but at least you had someone with whom to share your work. Of course, I am not suggesting that we go back to those days of backbreaking labor, slow oxen, runaway horses and churn dogs who did not "like" to work. Still, it is good to remember the days when the main source of power was you and your four-legged companion. 



*Rover, and other churn dogs like him, ran on a treadmill that operated a butter churn. The churn pictured above was a swing churn.*

*Iceboxes - con't. from Page 2*  
their particular model. Many companies had different models of iceboxes. Some were built smaller for apartments, while others were bigger for large families or boarding houses. In 1902, the price for an icebox could vary greatly for manufacturers, such as the Michigan

Refrigerators, which ranged from \$4.95 to \$25.95. By the mid-1920s, this price almost doubled with the Windsor Refrigerators that cost between \$8.05 and \$59.10.

Unfortunately for the icebox industry, with their profits becoming larger, their livelihood would soon end. In 1913, the first

household electric refrigerator was sold in Chicago. By the Great Depression and the end of World War II, the use of ice was close to being completely wiped out. It only took a few decades before all the icebox manufacturers were out of business and electronic refrigerators replaced them in homes. 

## Up-Coming Events

Our May Day Festival (see ad below) will open the Museum's season with past favorites, as well as new activities. Not only will we have our popular children's fishing derby and tree seedling giveaway, but we are adding labor history and a bit of spring cleaning, too.

Our next workshop is on Saturday, May 12th. In honor of

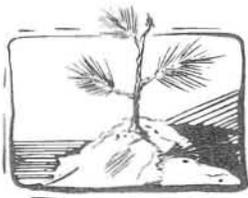
Mothers' Day, we will be offering a **cookstove workshop**, where participants will make a luncheon meal for themselves. Further information on this workshop will be arriving in your mail in the future.

On Saturday, June 1, the Museum will be offering its **Gathering of the Artisans** event where historic craftsmen will be demon-

strating their skills and offering mini workshops. That day is also the Museum's **2nd Annual Lumber Auction**. If anyone is interested in donating construction related items please call Director, Liz Callahan at 1-880-295-4992. A portion of the money raised is put towards the Museum's endowment, while the rest helps fund special projects. 



## May Day Festival Saturday, May 4th, 2002 10 am to 5 pm



Explore May and all its historical facets:

- Dance the **May Pole**
- Explore **Labor History**
- Help your child in the **Fishing Derby**
- Learn about **Worker Safety**
- Pick up a **Free Tree Sapling**
- Tour the **Working Mill**
- Plant the **Heirloom Garden**
- Try your hand at **Spring Cleaning**



There are many things for you and your family to enjoy and explore together!



*News - con't. from page 1*

**New York State Council on the Arts Funds Project** - The New York State Council on the Arts (NYSCA) has awarded Hanford Mills Museum \$5,400 for a collections assessment project this year. The Museum has hired Angela Gaffney, who has experience doing a similar project for the Delaware County Historical Association, to do much of the work in consultation with the Museum's curator. We will be taking a closer look at the

Museum's agricultural equipment and hand tool collections. Upon the completion of this project, we will have a better idea what is in those collections, their background and how we can make use of them.

**Thank You for Your Help with Funds & Ideas** - Hanford Mills Museum would like to thank everyone who contributed to the Annual Appeal. Your funds will help the Museum with its daily activities and special projects. The Museum receives major funding from a local foundation, but that is

limited by law. Your contributions help the Museum to survive.

We would also like to thank those of you who returned the survey included in the last issue of *Millwork*. We are still tabulating the results. When we are finished, we'll report our findings. You may notice one small result in this newsletter - many of you looked for our web address in the newsletter and did not find it. We have now included it on the back page. Thank you for your help and suggestions. 

# The Howland Mill

by Robert Grassi, Mill Foreman

I recently had the opportunity to visit one of the last surviving gristmills in Delaware County, the Howland mill. Located on East Brook in the town of Walton, this mill supplied flour and feed to neighboring farms for over 60 years. The farm and mill have remained in the same family for over four generations. It is currently owned by Theron and Pamela Howland.

Edwin R. Howland is credited with the construction of the mill on his farm. In 1851, at the age of 21, he moved to Walton from his birthplace in Hamden, NY. He married Margaret McDonald of Walton and settled on the present farmstead. The exact construction date of the mill is unclear, but we know it was used as a gristmill sometime between 1869 and 1880. Beers' 1869 *Atlas of Delaware County* shows a cidermill on the site of the present grist mill. Munsell's *History of Delaware County 1880* shows the present farmstead and gristmill in an engraving. Perhaps the earlier cidermill building was modified and updated with gristmill machinery in the 1870s. We will never be certain, but family history suggests that the mill building itself, including the dam, was constructed by Edwin and his three or four hired men. A professional millwright was most likely hired to help set up the waterwheel and machinery. Historically, many of the Howland family members were millers. Edwin was related to Phineas Howland, who operated the first gristmill in Walton, constructed in 1792 by Michael Goodrich. The Phineas Howland mill was located lower on the East Brook, about a half mile from the village of Walton. It was later owned and operated by Elias P.

Howland, a relative of Edwin. Edwin operated his farm and mill business until 1895, when the mill and farm passed to son, Owen L. Howland. Owen's brother, Edgar R. Howland, went on to operate Penfields' feedmill in Delhi.

For over thirty years, the Howland mill ground grain. It was operated as a custom mill. A custom mill ground only what farmers brought in to be processed. Merchant mills generally purchase grain from farmers, grind it into meal/flour and sell it retail or wholesale. A fee per bushel was charged in a custom mill for grinding. Typically, the fees charged were in either cash or a percentage of the total grain ground (often ten percent). Similar to D.J. Hanford's gristmill business, the Howlands also brought in feed and flour ground at other mills to be sold retail. This became possible when the O & W Railroad came through Walton.

The current owners have one of Owen Howland's original ledger books from his mill business, dated 1900-1901. In it, we find charges of 10 bushel ground for 40 cents, or four cents per bushel. The Hanfords were charging three cents per bushel during this same time period. Purchases of feed wholesale by the boxcar are listed from half a dozen companies including the Morris Bros., a mill the Hanfords dealt with on a regular basis through out their feed business (later known as West-Nesbitt Company of Oneonta). Payment for services was usually in cash or check, but the barter system, splitting and/or chopping wood, or trading pigs, potatoes, syrup/sugar or cheese, was also accepted. Typically, the heaviest use of any

custom mill, not unlike the Hanfords' gristmill, was after the harvest late in the fall throughout the winter. Wheat, oats, corn and buckwheat were the grains ground, both for animal feeds and home table use.

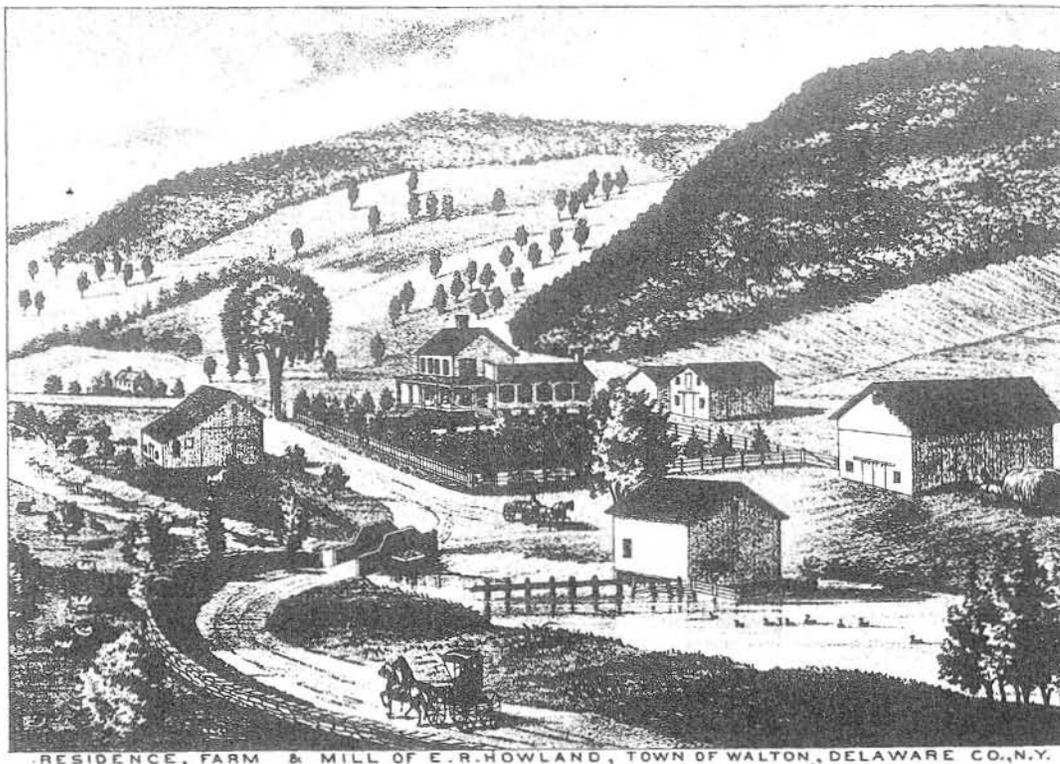
The mill last ran as a custom mill in 1903, but continued to supply prepared feed, flour and fertilizers to farmers until the 1930s. The property passed to Owen's son, Theron Senior, who ran the farm as a dairy. The feed business at that point had ended.

It is hard to determine what exactly caused the mill business to end, but we can be sure of at least one factor that attributed to the end of the business. While transportation was improving elsewhere, the mill had no good access to that transportation. The Howland mill, unlike the Hanford mill, had no rail line near or on the property. For many small rural feed businesses, it became increasingly difficult to compete with the larger feedmills located in urban areas with railroad access. Also, transporting grain from Walton most likely was not as cost effective in the 1930s as it had been in 1900. With improving roads and better vehicles, many farmers either picked up or had feed delivered by truck from the larger mills. The Hanfords purchased their first truck in 1918 and began delivering goods to area farms. The use of a delivery truck by the Hanfords, and later the Pizzas, continued into the 1960s until the mill closed.

The Howland mill is typical both in scale, plan and function of many rural mid- to late- nineteenth century custom mills in Delaware County. In fact, it is very similar in

*Con't. on Page 10*

*This drawing of the Howland Farm and Mill comes from the 1880 Munsell's History of Delaware County, New York. The mill looks like it is standing right in the pond. For some reason it is drawn facing the wrong direction. Theron's grandfather, Owen, was a boy at the time. He met the artist who drew this picture. Owen remembered that he annoyed the man by pestering him.*



*Howland - con't. from Page 9*  
 construction to D.J. Hanford's original gristmill built in 1868. Measuring 36 x 26 feet, the Howland mill is two stories and is of timber frame construction. The Hanford gristmill measures 36 x 24 feet and is also two stories of timber frame construction. Both share end wall access doors on each floor, and their choice of plan and type of machinery was surprisingly similar. Both were water turbine powered and utilized portable millstone mills as their primary grinding machinery. These portable millstone mills, utilizing French Burr millstones and iron frames, were manufactured by Munson Bros. Company of Utica, New York. Both mills contained two cup elevator systems, one for grain and one for meal/flour (used to elevate grain from first to second floor). They both contained on the second floor one grain cleaning/dressing machine, as well as a compliment of storage bins. Bagging stations and offices complete with wood stove

heat were located on the first level. The only additional machine the Hanford's mill contained was a water powered corn sheller.

The power source for the Howland mill was generated by an 30 inch, scroll type, water turbine located in the northeast corner of the mill. The vertical shaft from the turbine, with a large pulley attached, transmitted power to the millstone mill through a horizontal drive belt. The gate controls to operate the turbine were located next to the millstone mill. Through a bevel gear system off the turbine shaft, power was transmitted to operate a horizontal line shaft on the second floor. It was through this line shaft that the cup elevator system and the cleaner/separator were powered.

As in many mills of this time period, material flow was automated to minimize manual labor. One miller could operate this mill alone. Not unlike the Hanford gristmill, the Howland mill was of simple design in material handling.

As you entered the first floor through the front door with bags of grain to be ground, a grain bin was within easy access. With grain dumped into this bin, the cup elevator beside it would bring the grain to the second floor where it was conveyed by spout to a bin above the millstone mill for storage. On the first floor a spout conveyed the grain from the bin above to the hopper of the mill, to the shoe and finally into the eye of the top stone, where it was ground between the millstones into meal/flour. The Munson portable millstone mills utilized horizontal millstones and were "under runner mills." In an "under runner mill," the bottom stone turned and the top stone remained stationary. Once ground on the mill, the meal/flour was picked up by another set of cup elevators and brought upstairs to the second floor. There it could be stored in a bin or processed further by the cleaning/dressing machine. This horizontal reciprocating

*Con't. on Page 12*

# Put your Enthusiasm for Hanford Mills to Work - Volunteer Today (and Tomorrow)!

Mark you calendar: April 27<sup>th</sup> is Hanford Mills Museum's annual volunteer clean-up day. Rain or shine, we need your help with our "spring cleaning." We'll feed you well and provide the tools you need to get a variety of jobs done (although if you have a favorite rake or work gloves, feel free to bring them).

On volunteer clean-up day the jobs will vary to suit your skills and interests, our needs and the weather: windows, yard work, cleaning, painting and all the sublime tasks that go into preparing the site for the coming season of visitors, school programs and special events.

Maybe you can't make it to volunteer clean-up day but plan to volunteer at an event or two this season ... we certainly appreciate your time and effort - whenever and

however you help!

Hanford Mills is trying to expand its volunteer opportunities and its volunteer rolls. We plan to add new tasks for present and prospective volunteers to undertake. We are asking all our members and friends to "think out of the box" by considering the skills, talents and wisdom you might contribute to all aspects of the museum's operations.

Do you have an expertise in marketing, graphic design or merchandising? Are you a computer guru who can help us streamline our databases, network our computers or enhance our web site? Do you have an expertise in development, fund raising, planned giving or grant writing? Are you an educator who can contribute to expanding and enhancing the museum's education programs? Do you want to learn more about

producing exhibits or managing object collections? Are you an expert in historic steam power who can help with the evolving steam project, or a tradition bearer or historian who can offer a program or workshop at the museum? Do you enjoy working with children? Would you like to spend more time volunteering at the museum consistently - answering phones, helping with mailings, assisting with school programs, gardening, greeting visitors in the Hanford House or helping with any other ongoing tasks?

Please consider how you can contribute your time and talents to Hanford Mills - whether it's once a week, once a month or once a year. Complete and return the enclosed volunteer form, or call the museum to discuss how you can help.

Elizabeth A. Callahan, Director

*Please fill out and return this volunteer questionnaire if you volunteer at the museum or are interested in volunteering. Even if you are a regular volunteer, we would still love to hear from you, especially as to how and when you would like to be contacted.*

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Please contact me by (circle all appropriate): Phone E-mail Fax Mail

\_\_\_\_\_ Day-time Phone \_\_\_\_\_ Evening Phone

\_\_\_\_\_ E-mail \_\_\_\_\_ Fax Number

The best time of day to reach me is: anytime 8 am-10 am  
10 am-noon noon-4 pm 4 pm-7 pm evening  
specify time \_\_\_\_\_

I would be glad to help develop or implement hands-on activities for kids - I would be glad to work with school groups or day camp.

I would like to volunteer at the following special events:

- May Day Festival - May 4
- Gathering of Artisans - June 1
- Independence Day - July 4
- Antique Engine Show - Sept. 14-15
- Quilt Show - Sept. 28 - Oct. 14
- Sawyer's Holiday - Oct. 12
- Halloween at the Mill - Oct. 26
- Winter Ice Harvest - Feb. 1

I have the following expertise to contribute:

- Marketing
- Computers
- Design
- Fund Raising
- Education
- Museum Work
- Tour Guide
- Steam/Machines
- Crafts/Skills
- Office
- Other \_\_\_\_\_

Please include further information about your interests on a separate page.

Please mail to: Attn: Sara Sikes, Hanford Mills Museum, P.O. Box 99, East Meredith, NY 13757

Or contact us at 1-800-295-4992 or e-mail: hanford5@hanfordmills.org



*Howland - con't. from Page 10*  
cleaner/separator was manufactured by Huntley, Cranson & Hammond of Silver Creek, New York. It was used (depending on the size of screening utilized) to separate the meal, such as in the production of cracked corn, or to remove the larger bran flecks from buckwheat or wheat flour. The bagging stations were located on the first floor. Spouts with gates (located under the bins from the second floor) were used to fill bags with the finished product, to eventually exit through the front door.

Several years back, Mr. Ramon Oralls purchased the mill machinery from Howlands and removed the turbine from the wheel pit buried in three feet of silt. The rest of the machinery remained in the mill. Hanford Mills Museum

recently approached Mr. Oralls about acquiring the machinery from him to preserve it at the museum. We have since purchased the contents of the Howland mill and are working on moving it to the museum. This coming season, the Howland turbine and millstone mill will be displayed in our gristmill. The Hanfords' original turbine and millstone mill were long removed. As you may remember from a previous article on the attrition mill, the Hanfords upgraded and modified their gristmill operations in 1898. They went from milling with millstones to milling with steel plates in their attrition mill. The Hanfords had as many as three turbines in use from 1869 through 1926, when the installation of the Fitz overshot waterwheel put this technology out

of service. The remaining Howland machinery will be placed in collections for future use/display. In the long range plans, we would eventually like to return the water turbine and the Munson portable mill to active service in our mill. We will be able to demonstrate the use of water turbines and millstone milling to the public. This would enable us to more accurately demonstrate the first 30 years of operation in D.J. Hanford's gristmill with the use of water turbines as a power source. The turbine will eventually be placed in the exact location of the original 1869 gristmill turbine. The attrition mill portion of our gristmill, powered by our Fitz waterwheel, will continue to operate without any modifications to the original system.



**Seasonal Full-Time and Part-Time Staff Wanted.** Tour Guides: Give tours in historic working mill and farmhouse, perform light maintenance and artifact cataloging.

Woodworking skills a plus. Sales Clerks for Museum store. Positions available May 1 to Oct. 31. Must be able to work weekends. Apply at Hanford Mills Museum.



#### Board of Trustees

President: Gordon Roberts  
Vice Pres.: Charlotte Hill  
Treasurer: Jim Ferrari  
Secretary: Ken Kellerhouse

Jim Baldo	Grace Kent
Betty Bergleitner	Matt Kent
Bob Bishop II	Richard Meyer
Barbara DiCocco	Tom Mirabito, Jr.
Robert E. Goble	Jerry Pellegrino
Jim Hartmann	Dan Rion

Martha Symes

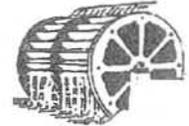
Trustee Emeritus: James M. VanBuren

#### Museum Staff

Executive Director: Liz Callahan  
Asst. Director/Curator: Caroline de Marrais  
Mill Foreman: Robert Grassi  
Educator/Gift Shop Manager: Sara Sikes  
Bookkeeper: Louise Storey  
Marketing Coordinator: Sara Ramsey  
Maintenance: John Anderson  
Intern: Rebecca Palmer  
Interpreters:  
Bill Brindle Charlie Gardner  
Fawn Houghton  
Gift Shop: Betty Brindle Kara Chambers

**MILLWORK** is published by Hanford Mills Museum and distributed free to members. It is edited by curator, Caroline de Marrais and printed with funds from the O'Connor Foundation.

## MILLWORK



Winter/Spring, 2002 Copyright ©2002 Hanford Mills Museum Vol. 16 - No. 1

### Hanford Mills Museum

P.O. Box 99, East Meredith, NY 13757

Telephone: (607) 278-5744

Non-Profit Organization  
U.S. POSTAGE  
PAID  
Permit No. 2  
East Meredith, NY 13757

Internet: [www.hanfordmills.org](http://www.hanfordmills.org) Editor's E-mail: [hanford2@hanfordmills.org](mailto:hanford2@hanfordmills.org)