

It is nearing the deadline to register for the Spring SPOOM Mid-Atlantic meeting at Newlin Grist Mill. We are excited about sharing our experiences and discoveries with everyone and hearing about your experiences. Our staff is busy preparing the site, unpacking the miniature mill equipment collection, pulling out exciting archaeological finds, and installing the Delaware County Mills exhibit. The archaeologists found the bottom of a ceramic mug just this morning in the wheel pit excavation. Our millwright volunteers are busy building the wheel and hope you will join us in the shop to work on the project while you are here.

No matter if you can only come for a day or the whole weekend, it is sure to be a great time!

Below is a sneak peek of what we have planned for the coming meeting.



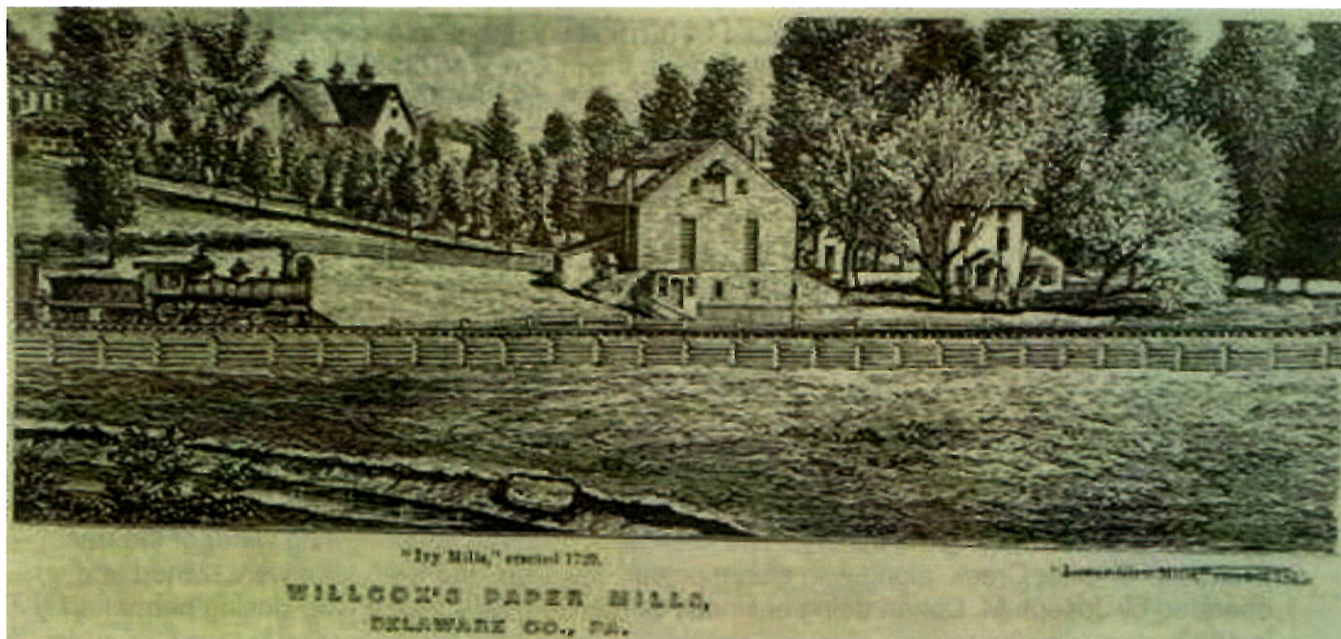
The millwright shop where staff and volunteers are fabricating the water wheel using 18th century tools and techniques as an experimental archaeology project.



The artifacts keep coming out this pit which is currently 5-ft deep and continuing to go down. It will be exciting to see what we find by the time you arrive.



We will be baking in our wood-fired oven where you can learn about the qualities of these incredible culinary tools!



We will be having dinner on Friday night at Ivy Mills and tour the mill ruins and mansion.

A National Register-listed site, Ivy Mills is the name of two paper mills owned and operated by Thomas Willcox at the same location in Concord Township for 50 years, 1729-1779, and by his son and grandsons until 1866. The first, and main Ivy Mill, was the third paper mill in the English colonies. The second was a sandpaper mill (date unknown), almost certainly using garnet sand from nearby garnet mines. The name also refers to the Willcox Homestead, across the road.

Location: Quality papermaking required pure water, so colonial paper mills were located either upstream from major cities or completely beyond city rivers. Concord Township and the West Branch Chester Creek was an ideal location outside Philadelphia. Family tradition holds that Willcox, from Ivy Bridge in Devonshire, was “raised up to papermaking”. He was also Roman Catholic, then prohibited in England. Except for Pennsylvania, English colonies in the New World excluded Catholics from meaningful participation in public life. Willcox emigrated to William Penn’s religiously tolerant colony in the 1720s, appeared first on a tax list in Concord in 1725, and began operations in 1729. Welcomed by neighboring Quakers and Episcopalians, the Willcoxes often hosted missionary priests from Maryland. Their home thus became the earliest regularly worshipping Roman Catholic community in Pennsylvania.

Making Paper: The water system consisted of

- ▶ the water source – West Branch of the Chester Creek
- ▶ the dam – 1000’ upstream
- ▶ the mill pond – stored water to allow regulating the water flow
- ▶ the mill race – leading water from the dam toward the water wheel and machinery inside the mill building
- ▶ the overflow race – drawing excess water away from the mill during heavy rain
- ▶ the water wheel flume – leading water from the mill race to the inside water wheel
- ▶ the rag vat flume – leading water from the mill race to the linen rag vat
- ▶ the main tail race – leading the water away from the water wheel
- ▶ the secondary flume – leading water away from the rag vat to the settling pond
- ▶ the settling pond – allowing remaining bits of linen from beating the rags to settle before the water reached the second tailrace
- ▶ the settling pond tailrace – leading water toward the main tail race, 1000’ downstream, returning clean water to the West Branch of Chester Creek

Machinery powered by the flowing water beat linen rags into a slurry using clean water, and pressed excess moisture from the slurry. The process concluded with delicate hand operations. No machinery was ever removed from the building. As the building fell into ruin, the machinery fell into the muck and mire. Over the centuries, various bits and pieces have emerged, but most await a full- scale archeological dig.

Selling Paper

Stationers and printers in Philadelphia and elsewhere purchased paper wholesale from Thomas Willcox, who at first made only pasteboard, a stiff cardboard used for book covers. He soon added finer quality papers, specializing in currency paper for banks, state governments, and beginning in 1775, for the United States of America (before the Declaration of Independence).

Closing Ivy Mills

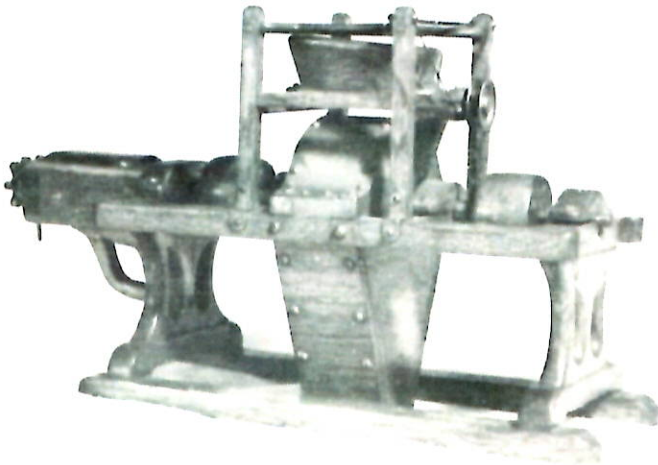
The 1729 mill was rebuilt and enlarged in 1830 by Thomas’s grandson James Mark Willcox, but closed down and abandoned in 1866. Papermaking continued in the two paper mills built by James Mark in nearby Glen Mills, beginning in 1837, equipped with automated, more efficient Fourdrinier paper-making machinery. The Glen Mills used the faster-flowing water of the East Branch of Chester Creek, along with steam power. By 1894, the Glen Mills were owned and operated by Joseph M. Dohan doing business as the Glen Mills Paper Co., closing permanently in 1922.

MILLING MACHINERY IN MINIATURE

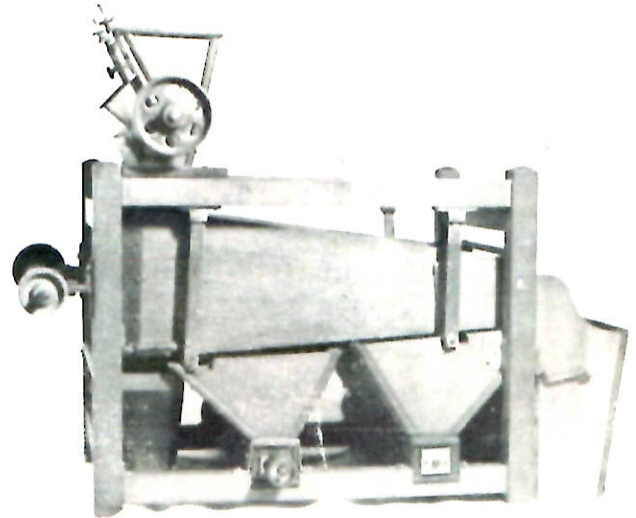
By Peregrine White

There are many American flour mills that could be described as "model mills" simply because of the industry's efforts to take advantage of advances in technology. However, there are few — if any — model mills in the sense of mills in miniature.

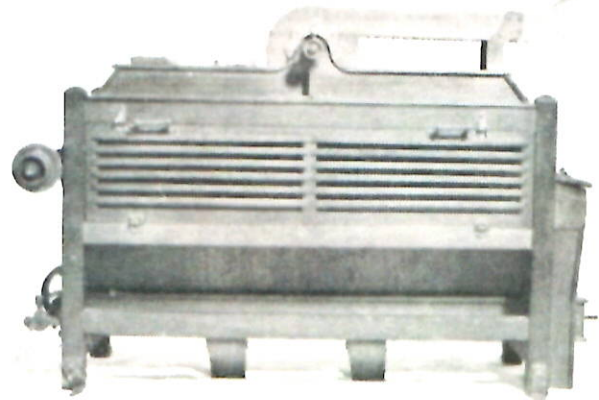
The miniature mill owned by Paul Lucas, Sanford, N.C., is probably unique from the standpoint of the quality of its craftsmanship and the scrupulous attention to detail. Behind the mill is the story of a model builders lifetime love affair.



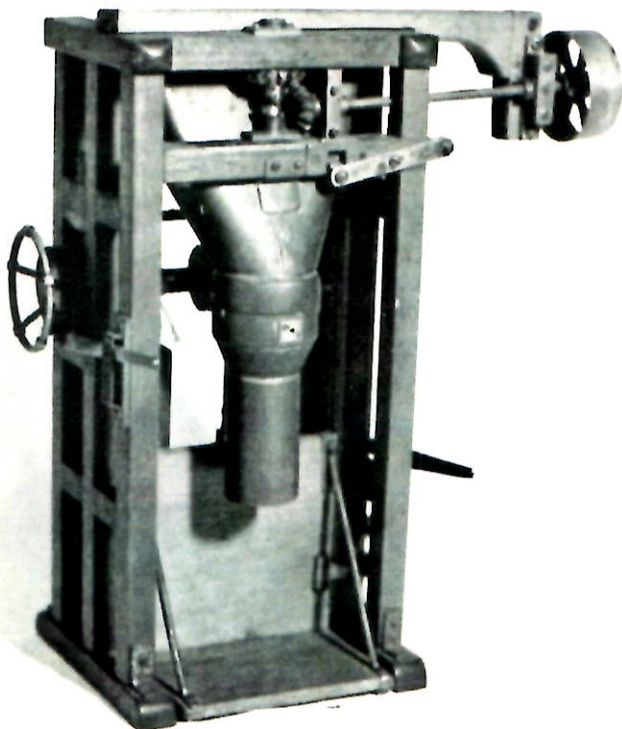
A hammermill used in grinding the screens.



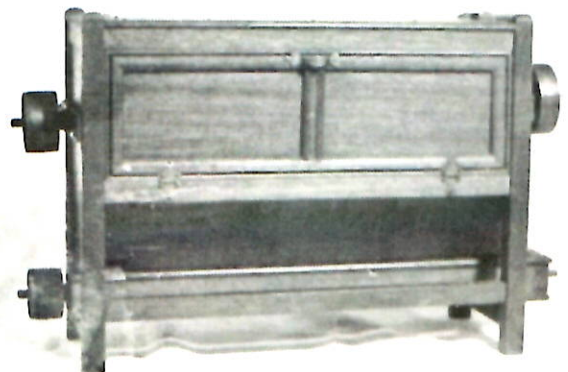
The receiving separator.



Miniature separator-purifier.



An auger packer complete with tube and drive wheel.



A reel type mixer.

The models were built by Charles Derringer, Harrisburg, Pa., who in earlier life had been employed in various flour mills. Starting sometime in the 1880's, Mr. Derringer began his project, a labor of love that was to occupy him for 35 years, until his death in the 1920's.

Model connoisseurs have pronounced these models as being close to perfection. They are built to scale, and are in working order, including rolls that are adjustable for actual grinding. There are spring locked roll adjustment fixtures, tiny adjustable bearings, gear trains, rollers, pulley belts, brushes, sifters, and purifiers.

For several years, they were exhibited at the Smithsonian Institution, in Washington, DC.

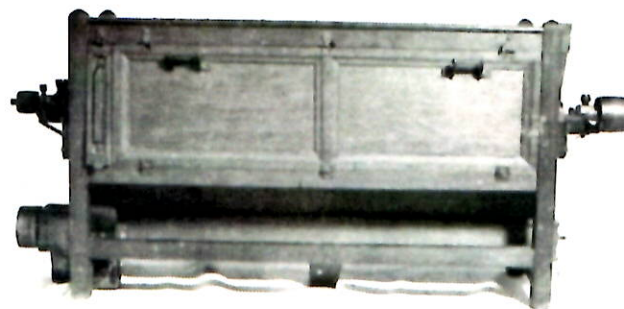
There are twelve units of machinery in the collection. It includes four roll stands, two of them with corrugated rolls, two with smooth rolls. There is a receiving separator, a hammer mill, a separator-purifier, an auger packer complete with tube and drive wheel, a scalper, a bran duster, a reel-type mixer, and a sifter. The sifter is the giant of the group, standing 13 inches high. The roll stands are about 10 inches high.

Supplementing these machine models are 11 elevator heads and boots, over 500 elevator cups, shafting parts and rollers, belt tighteners, shaft stands, and belts.

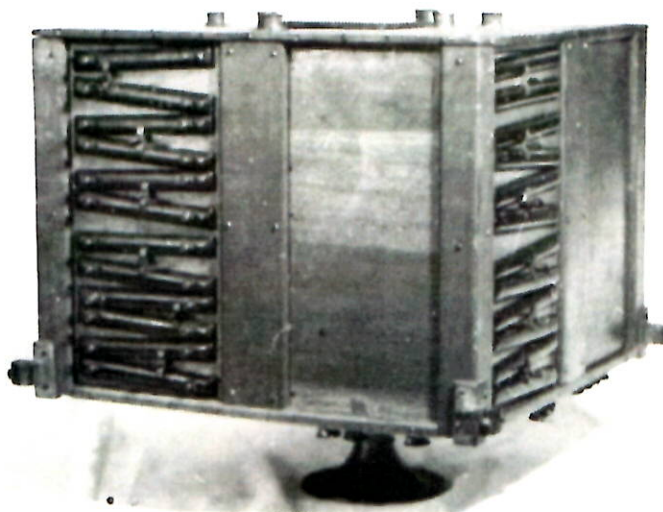
A local Sanford, N.C., miller who is familiar with the set of models is certain that with a little encouragement they would actually grind wheat into flour.

Such is the fruit of 35 years of craftsmanship beginning in the 1880's. As the work went forward, Mr. Derringer altered his designs to reflect improvements made in actual milling machinery. Possibly, he was thinking of improvements of his own design. His actual intention will never be known. He relied on a fabulous memory rather than written material, and he destroyed whatever notes or correspondence there was before he died.

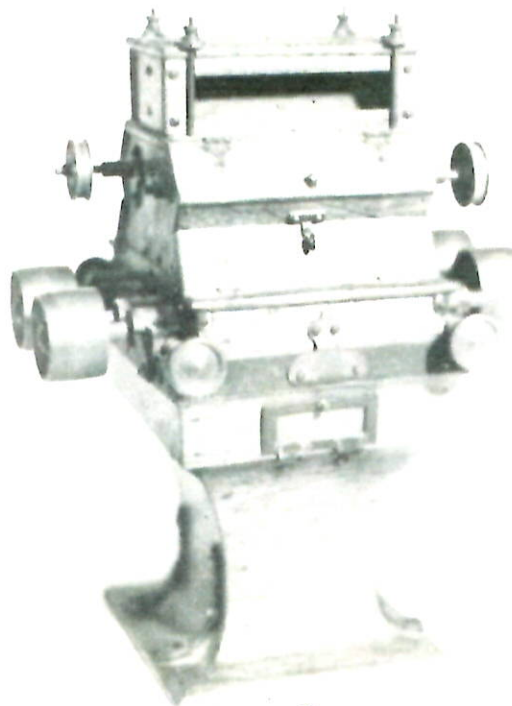
(Pub. note: Mr. Lucas is hoping to find a Museum home for this fabulous model. Interested parties should contact him at: 1206 Bickett Rd., Sanford, N.C. 27330.)



Bran Duster — the side boards fold down to reveal the brushes.



The "giant" sifter standing 13 inches high.



One of the four roll stands from the Derringer model collection.



A scalper or cleaner.