

## The Mills at Ephrata

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Ephrata Cloister



### Introduction

"Fire!" was the cry heard one cold winter night early in December, 1747. "Fire at the mills!" With buckets in hand, the men and women of Ephrata rushed to the scene of the blaze, tossing buckets of icy water on the flames. When the sun rose in the morning, a smoldering pile of ashes, and the remains of a scorched building, marked the spot where industry had once thrived. The venture in milling was only made six years before, and now it looked as if there would be no more return on the investment. But this loss not only struck a blow to the economy of the settlement, but also to its survival. The community diary reports that, "within four hours in this fatal night, the whole flour-mill with three stones and a great quantity of wheat were consumed; a skillfully built oil-mill, with stones the like of which none before existed in America, besides a large store of oil, and above 500 bushels of flaxseed. A complete fulling-mill with all that belongs to it."

One of America's earliest religious communities, the [Ephrata Cloister](#) in Ephrata, PA was founded in 1732 by German settlers seeking spiritual goals rather than earthly rewards. Gathered in unique European-style buildings, the community consisted of celibate Brothers and Sisters, and a married congregation of families. At the zenith of the community in the 1740s and 1750s, about 300 members worked and worshiped at the Cloister.

As with all colonial endeavors, mills and products of mills were central to the prosperity and indeed survival of communities such as this. It is in Ephrata that we have an excellent link between present and past, and in the continuity of medieval European technologies to the colonial American experience.

### Ephrata

Ephrata, a small village along the Cocalico Creek in northern Lancaster County, was founded in 1732 by Conrad Beissel, a German mystic. During the next dozen years nearly 80 celibate Brothers and Sisters followed Beissel to prepare for the Second

Coming of Christ. Together they built impressive late medieval German-style buildings on 250 acres of shared land.

Beissel's mystical theology embraced Sabbath worship, celibacy, adult baptism, and mutual support for sustaining daily necessities. His view that God embodied both male and female aspects led him to prescribe a lifestyle of strict self-denial and discipline as a way to achieve balanced gender roles on earth. Adopting a monastic dress and schedule, the celibate members occupied their days with periods of private meditation balanced with domestic chores, agricultural labors, and the operation of several mills. By 1745 the Brotherhood established a printing office to produce works of their own authorship and for outside customers. As exercises in discipline and expressions of faith, the members devoted time to the creation of the Gothic lettering known as *Frakturschriften* along with intricate panned designs, and the composition of vocal music which they performed without musical accompaniment.

Although he encouraged celibacy, Beissel welcomed families from neighborhood farms to worship with the celibates who valued their support. These Householders followed independent lives as farmers and craftsmen and numbered nearly 200 individuals in the mid-18<sup>th</sup>-century. Following Beissel's death in 1768 the celibate population of Ephrata declined and by 1813 the last celibate member died, leaving the property and faith to the remaining Householders. The following year they created the German Seventh Day Baptist Church. Congregation members continued to live and worship at the site which came to be called the Cloister as the surrounding town of Ephrata grew around them. Membership in the German Seventh Day Baptist Church dwindled and the congregation was dissolved in 1934. In 1941 the Commonwealth of Pennsylvania purchased the remaining 28 acres and nine original buildings and began restoration of the historic site.

### **Milling**

Visitors in the 18<sup>th</sup> century mention the various mills operated by the community: grain, saw, paper, oil, and fulling mills all appear in the descriptions of Ephrata. One commenter even adds that, "at the same time they are well versed in the mechanical arts, excelling the best artisans of England, as witness the mechanical works of their various mill, etc." Yet, there is little hard evidence remaining to tell the story. No buildings or equipment survive, nor do any extensive business records. In fact, Ephrata's milling history can only be told in the most general terms, using information about better-documented contemporary mills as a basis for analysis.

The story of Ephrata's industrial enterprises begins in 1741 with the purchase of 75 acres of land adjoining the settlement. This property included a grain and saw mill, which, within a few years, was expanded to include a paper mill, oil-mill, and fulling mill. This industrial center was located along the Cocalico Creek, about a half-mile downstream from the community's center. The mill site also served as the market place for the neighborhood, and, in difficult times, provided Brothers with a retreat from community disruptions.

The account of the fire which occurred at the mills on December 5, 1747, provides one of the few contemporary descriptions of the industrial complex. Based on this description, it is surmised that all five mills--grain, saw, oil, paper, and fulling--were housed in a large communal structure, likely drawing power of the same centralized drive shaft. While this sounds like it may have been an engineering challenge, the task was not unreasonable. The oil mill built by the Moravians in Bethlehem in the 1750s, for example, also contained a hemp mill, tanbark mill, groat mill, and snuff mill. Different operations required varying amounts of power, and many products were manufactured seasonally, leaving portions of the mill idle for periods of time.

Ephrata's grain mill was remodeled by the Brotherhood in 1784, but what changes were made between the new and original mill remain unclear. By the first quarter of the 19<sup>th</sup> century the grain mill became a burden on the shrinking German Seventh Day Baptist congregation, who attempted to sell the property. After prolonged efforts, the mill was sold to a private individual in 1858. At that time, the mill still had a saw mill attached, but there is no mention of the oil or fulling mill.

While milling was an important industrial feature of the Ephrata Cloister, little is really known about things such as the details of production, materials, or times of operation. Certainly some records must have been kept as a normal part of doing business, but only one ledger from the grain mill is known to survive, and it remains untranslated from its original German. Perhaps the mills of Ephrata were so commonplace as to not merit additional attention. Perhaps the abandonment of milling by the German Seventh Day Baptist Church nearly a century before its own demise can account for some of the mystery. Then too, Conrad Beissel's emphasis on spiritual goals rather than material gains had little time to focus on matters of daily existence. Ephrata was formed as a place that looked to the glorious future ahead, not the routine requirements of the present.

### **Baking and Sawing**

The grain and saw mill were the first enterprises which engaged Ephrata's Brothers. Between the grain raised by the Brotherhood, and that grown by the neighboring members of the married congregation, Ephrata was able to supply its own needs for flour and meal. Records do not survive to address the specific grains ground or quantities produced, but if they were like their German neighbors, the people of Ephrata likely raised rye, buckwheat, and spelt in addition to wheat. In this region, wheat was a cash crop, preferred in the English-dominated market. The Germans generally retained the less desirable grains such as rye for their own consumption. Generally, it is thought that the average local resident consumed the equivalent of one pound of bread per day. With about one-half pound of flour going into such a daily ration, people may have consumed as much as 180 pounds of flour per person, per year.

In addition to agricultural labors, the Brotherhood owned a large amount of forested land. Only 60 acres of land were noted as "cleared" on the 1758 tax records. Not

surprisingly, the acquisition of the saw mill helped to quicken the pace of building in the community, with four multi-story log and half-timber buildings being constructed within five years after the mill's purchase in 1741. Numerous smaller buildings were also constructed in the same period, taking advantage of the available technology. The most visible evidence of the saw mill's production still surviving from the 18<sup>th</sup>-century can be seen in the unusually constructed plank ceiling in one of the buildings at the site. Ephrata's Brothers were also known for assisting newly-arrived settlers in building their own homes, likely using output from the saw mill.

## **Papermaking**

Conflicts with the Germantown printer, Christopher Saur, occurred in 1739 when he began production of a hymnal for Ephrata. Saur objected to the lyrics of one of Conrad Beissl's newly composed chorales, and the war of words between the two men appeared in Saur's newspaper in 1740. This challenge likely spurred the Brothers into expanding their existing enterprises by acquiring a printing press and type, which naturally needed paper on which to produce the imprints. An exact date for the opening of Ephrata's paper mill is unknown, but by 1745 at the latest, the Brothers were producing their own linen rag paper. Unlike the grain and saw mill where the machinery did most of the production work, in the papermaking process the mill provided only one step in the manufacture of paper. In actuality, pulp mill would be more descriptive of the mechanical process involved in making paper. Linen rags were first left to soak in water for nearly a year to begin the process of reducing them into fibers. They were then placed in the pulp mill where large wooden hammers, driven by water power, were lifted and dropped to break the fabric down into pulp. (You probably thought "beaten to a pulp" was only something bullies did on the playground!) The pulp is floated on water and a screen-like device called a mould is used to capture the fibers and form the paper sheets.

Ephrata's paper is distinguished by several unique "watermarks" -- thinner areas on the page created by wires bent into an artistic shape or letter and sewed to the surface of the wire screen mold. Watermarks are visible when held in front of a light source. The word "EFRATA," a horn, and "1744" all appear at different times in Ephrata's papermaking history. For a brief period, the most elaborate watermark used incorporated a cross, keys, yokes, and the words "ZION" and "EFRATA." Many of the pages of Ephrata paper which survived suggest that it was a heavier, coarse paper than produced by some mills of the period. One contemporary source says Ephrata is known for its production of "paste board," a type of card board.

By the mid-1750s Ephrata members constructed a second paper mill upstream from the first, just north of the community's center. It is unclear when production ceased at the original mill, but this new mill continued in production, passing into the hands of members of the married congregation by the 1770s. In 1828 this new paper mill was sold to an individual with no previous connection to Ephrata. The building was remodeled and expanded several times until, by the mid-20<sup>th</sup>-century, the few remaining elements of the original building were completely enveloped in the modern textile factory which now occupies the site.

## **Oil and Fulling Mills**

In addition to supplying the printing operation with paper from the paper mill, the press was also supplied with an important ingredient in the ink used for printing--linseed oil. The oil, boiled with lamp black, formed a thick, sticky ink which adhered to the printing type and could be transferred to the page. The hint given by the description of this mill during the fire of 1747 suggests that, like the paper mill, the true "milling" operation was only a portion of the production process. Flax seeds were obtained from local farmers after the harvest of the crop in mid-summer. The small seeds were placed in shallow iron pans placed over a stove to warm them, and encourage the flow of oil from inside each tiny seed. A stirring device, powered by the main shaft, kept the seeds from scorching in the pans. The warm seeds were then placed on the bed stone and a second stone, standing vertically like a wheel, was rotated around the bed stone in a circular pattern, much like a tire wheel. This "edge runner stone" was the heart of the oil mill and, by its action, the linseed oil was pressed from the seeds and drained from one side of the bed stone. The flammable nature of the oil and the heating process added an extra danger to the oil mill, and this may have been the source of the disastrous fire in 1747.

The final mill operated by the Ephrata community, the fulling mill, is the least recognized or understood. This mill had various functions involved in the final production stages of woolen cloth. After being taken from the loom, the cloth was brought to the mill where it was washed in hot water and "fuller's earth," a fine clay which absorbed the natural lanolin oils in the wool. The mill provided the power for the large post-like beaters which were used in the washing process. The washing also caused the cloth to shrink, tightening the weave of the fabric. Finally, the nap of the cloth was trimmed before it was returned to the customer.