

The Grist Mill

One of the many enterprises maintained at Hudson's Bay Fort Colvile was the grist mill. There was also a blacksmith shop, a boat building area and of necessity for that a lumber sawing operation, which would at first been a pit saw. No wonder Hudson's Bay often referred to them as a "factory" instead of a "fort". The chief operating officer was often called a "factor". Fort Colvile was also a farm. It's 1838 production included 9000 lbs. of fine flour and another 1000 lbs. of gamine or coarse flour as well as wheat, Indian corn, oats, barley, buckwheat, peas, and pork. The mill was integral to the farm's production.



In 1838 the flour mill would have been powered by Meyers Falls. Today there is still a hydroelectric power house at Meyers Falls. Louther Meyers also had a lumber mill at that site. These mills and electric power plant are considered to be the longest continuously running hydropower site west of the Mississippi. The mill stones from the flour mill are at the Kettle Falls Historic Center as well as a model of how the mill operated.

The mill stones themselves are pieced together and held in place with a metal band. This leads me to believe that they may have been French. *“French buhr stones were considered the best--and they were expensive. The French quarried them in smallish lumps from beds of softer stone, shaped them to fit together, and bound them with heavy iron bands into the thick disk shape of all millstones.”* (Penn State University) Those at the museum must have been late in the history of the grist mill. They weigh over a half ton each, which would have been too much for boats and may not be from the Hudson’s Bay era. In 1843 trappers and traders of The Hudson's Bay Company remodeled the original Hudson Bay grist mill under the direction of Mr. Goudy, who later became the mill's namesake. As demand increased and technologies improved, the Goudy Mill was renovated several times until it burned down in 1916. By that time the flour mill in Colville had been opened in 1905.

This leads to another legacy of the grist mill. When Hudson’s Bay left the site of the “fort” in 1871, assets were sold to local people. We live in a time of “supermarkets”, where you can buy food and products from around the world. In 1838 a flour mill was not just another place to get flour. It was the only place to get flour. It was a community center. Farmers would bring their grain to the mill and wait while it was hoisted to the top floor of the building and trickled down to the mill stones where it came out as flour. The owner of the mill would take a percentage of the flour and the farmer would leave with their share. This was not always done honestly. In the case of the Goudy Mill, without Hudson’s Bay people to oversee the process, native farmers were not allowed to have their grain milled at all.



(People of the Falls, David Chance). Today many people are realizing that they do not digest gluten well, Natives adapted much more readily to the corn flour than the wheat.

In later years, the flour would have filled bags. These were taken home and stored in a high and dry place to avoid mold and hopefully insect and rodent damage until the next crop could be brought in. Hudson’s Bay would more likely have packaged the flour in barrels that could be shipped with less danger of physical and water damage.

Having ground a fair share of wheat and corn in a small steel mill by hand, I was not at all prepared to understand exactly how old and how complicated the process of milling grain is. *From the late 10th century onwards, there was an expansion of grist-milling in Northern Europe. In England, the Domesday survey of 1086 gives a precise count of England's water*

powered flour mills: there were 5,624, or about one for every 300 inhabitants, and this was probably typical throughout western and southern Europe. (Wikipedia) Built 800 years later, the HBC mill certainly fed more people than 300. By that time, the technology was very well developed.

It was tricky. The stones would sit one on top of another in a typical horizontal mill. The top or “running” stone hung a little deeper in the middle while the bed stone below it had a slight depression in the middle. Both have groves slanting out from the center. The effect is to move the grain to the outside edges as the top stone turns, grinding it smallest just before the flour falls off the stones. The mechanism is surrounded by a wood enclosure that forces the flour toward an outlet that usually goes down to the floor below, where it is either packaged or sent back to the top of the mill for more sifting and sorting. The miller does not want the stones to rub against each other. If they do and wear down, the heavy top stone needs to be lifted out, turned over and the groves reestablished with a chisel and hammer.

To prevent that and control how fine the flour is ground, the mechanism that turns the top stone controls a rod that fits into groves under the top stone. It can both lift and turn the stone as grain is slowly fed through a hole in the middle of that running stone. An opening in the casing beneath the stones can be opened to test the grit of the flour. It is the source of our saying “rule of thumb” because the miller rubs the flour between his thumb and forefinger.

Meyers Falls has a dam above the falls. From the pictures we have, it appears that the water wheel was under the mill house. There were probably some controls. If the mill turns to fast, the flour heats up and the oils spoil quickly. 120 rpm was an average speed.



Just as flour was always in danger of spoiling or being eaten by insects or rodents, the mills themselves were in the perilous position of being next to a stream that changed flow seasonally and in response to weather conditions. Often mills would flood and need to be rebuilt or repaired. Even more dangerous was the flour itself. Floating in the air, it can ignite explosively. Hot freshly ground flour was

sent to a large, enclosed box and left to settle before being packaged or sifted. The vibration of the mill mechanism endangered the building and was separated on its own foundation from the rest of the structure. High-maintenance or not, grist mills were central to a European way of life and were established at most fur trading posts.