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Lime kilns and lime mortar

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Located in the Town of Barre is Lime Kiln Road, named for a lime kiln which was once located there. Actually, the road name is one of the few remnants left from a day and age when lime kilns were a necessity. Our photo taken in 1900 shows one of the kilns in Barre while it was still operational.

What then, was the function of a lime kiln? In essence, they were used to obtain lime out of limestone. In the southern portion of Orleans County, there are outcroppings of limestone, which was readily procured and ideal for making lime. Limestone could be taken from these outcroppings or a quarry.

"For burning common lime, the simplest form of kiln in common use in Europe is fired with wood. The kiln is circular in horizontal section, and is generally constructed of rough-hammered limestone without mortar. It is usually located on the side of a hill, so that the top is accessible for charging the kiln, and the bottom for supplying the fuel, and drawing the burnt lime.

The largest pieces of the stone to be burnt are the first selected and formed into an arch. Above this arch, the kiln is filled by throwing the stone in loosely from the top, taking the largest first, and the smaller pieces afterwards. These latter are also piled up above the mouth of the kiln."

Once the kiln was loaded with firewood underneath, lime rock was ready for firing. The Cultivator magazine in 1840 noted that



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rock, fresh from the quarry, burns more easily after it dries by laying exposed to the action of sun and air. Firing took at least 24 hours, depending on the size of the kiln and quantity of lime rock. The burnt product is known as quicklime, which was stored in casks or kegs and kept dry until used (still in stone form — no powder).

For making lime mortar, commonly used in stone and brickwork throughout the 19th century, lime was slaked. Fired limestone was placed into a shallow wooden box or pit and then covered with water. In five to 10 minutes, the water boils, and steam and vapor are given off. The stones absorb the water and disintegrate into a pasty pulp or lime paste, which is ready for use in 24 hours. The lime mortar could also be preserved indefinitely in sealed containers or on site in trenches covered with sand.

The final mortar is made by adding sand in small batches for daily use. The Cultivator wrote in 1842 that "mortar that has been made some weeks is generally preferred." One cobblestone mason who felt aged mortar was better mixed up his

batch in the fall, buried it in a pit and kept it from freezing over the winter by covering the pit with cow manure, which creates its own heat while fermenting.

Chester Clark, a builder of cobblestone structures from Marion, said in 1838 that "the coarser and purer the sand, the stronger will be the cement and firmer the wall. As for the proper quantity of sand with the lime, it depends on its coarseness and purity. The proportion which I generally use, is from five to eight bushels of sand to one of lime in the stone."

In 1888, Michael Murphy produced 22,000 bushels of lime at his kiln in the Town of Clarendon and intended to burn lime all winter. Lime at that time sold for 20 cents per bushel at the kiln and 25 cents per bushel delivered.

Lime has many practical purposes, not only for mortar and plaster, but for agricultural purposes like fertilizer. Lime was commonly used years ago in outhouses to sweeten the odor and sanitize the pit under the seats. As technology advanced, Portland cement became more popular around the turn of the century.