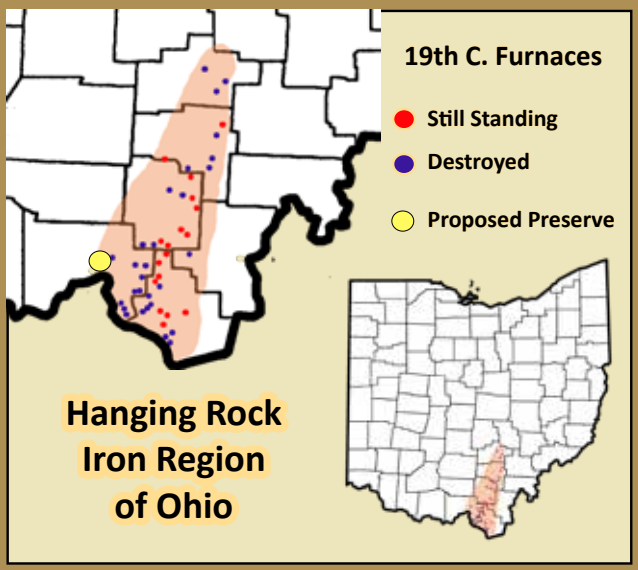
CLAY

of Ohio Hanging Rock

Until around 1.8 million years ago, the great Teays River cut northward just east of Portsmouth and immediately west of Ohio Hanging Rock. This immense river arose in the high mountains of North Carolina, carrying along its corridor southern plants such as Mountain Laurel and Rhododendron.

The Ice Age brought an end to the Teays when south-moving glaciers blocked its north passage, damming its water into a large lake almost three quarter the size of modern Lake Erie. This lake endured for an estimated 6,500 years, all the time depositing clays up to 100 feet deep on the bottom of its still waters. These fine deposits became the unusually high quality clay still found in the lower elevations of Ohio Hanging Rock, forming the basis of a once-successful fire brick industry in the region.

Indigenous cultures also made use of this clay for pottery making. The 2000 year old Hopewell Culture fashioned the clay into animal effigy pipes, including the raven above.



The Rise and Fall of Industry at Ohio Hanging Rock

By John Jaeger

With the establishment of the Northwest Territory in 1787, pioneers floated down the Ohio River and began to settle in Ohio, using the Scioto and Little Scioto Rivers as their entry points into the Ohio Hanging Rock Region.

The industrious settlers noticed iron and clay deposits exposed on the sandstone slopes of local rock formations, and limestone buried below the sandstone. These, along with forest resources, would become the predominate natural resources that would propel commerce in the region.

By the early 1800's, Southern Ohio was the major producer of iron in the United States. By the 1860's, forty-six furnaces had been constructed for iron manufacturing in an area that became known as the "Ohio Hanging Rock Iron Region," extending from the city of Logan, Ohio, through Lawrence County and Portsmouth, and across the Ohio River into Kentucky.

Iron furnaces were constructed of sandstone blocks; sandstone being readily available in the iron region. In order to prevent the interior furnace walls from crumbling in the intense heat, they were lined with heat-resistant firebricks manufactured from local clays.

Inside the iron furnaces, air was forced with bellows over burning charcoal to produce temperatures hot enough to melt the powdered iron ore mixed with powdered limestone. The discarded waste product from the iron furnaces was a shiny, glassy substance known as slag.

In the iron era of Ohio, furnaces produced an excess of 100,000 tons of iron annually. This semi-finished metal was referred to as "pig-iron," which was shipped on the Ohio River to Pittsburg, St. Louis, and Cincinnati where it was further refined by industrial iron mills and converted into steel and other finished products.

During the Civil War, iron from the Hanging Rock Region was used to create armor plating on ships and the casting of cannons. During the war years the need for iron began to outstrip southern Ohio's supply. The forests needed to provide the charcoal to heat the furnaces had been clear cut more than once and would only grow back so fast. Plus iron resources were less reliably coming out of the Appalachian hills. After the war, newer, more efficient methods of iron smelting were invented, moving the iron industry hubs from rural Ohio to Portsmouth and Pittsburgh. Later, iron ore was discovered in other regions, such as the Mesabi Range of northern Minnesota, which proved to be a more reliable source of iron for our rapidly growing country.

The old refractory clay mine entrance for small rail transport cars still stands at Ohio Hanging Rock. Pictured is Craig DeAtley. Photo by John Jaeger.

While the iron industry in southern Ohio was failing, the clay industry was growing. Clay mines were built into the hillsides where miners worked the clay with picks and shovels. They loaded the clay by the shovel-full into large oxen-drawn rail carts which were then taken to the tipple and dumped into transfer cars. The clay was hauled a short distance to the clay factory where it was sifted to remove rocks, crushed into powder, and placed into 100-pound bags to use for the making of bricks and firebrick mortar.

Evidence of the clay mines can still be seen roughly 100 feet above the elevation of Frederick Road. The mine shafts were cut horizontally into the chosen vein of clay. Walls were left standing between horizontal mine tunnels to support the earth above. Shafts were excavated from the tunnel to the surface to bring fresh air into the mines. Walking the ridgeline of Ohio Hanging Rock in the clay region, a person can still see sinkholes created by caved-in air shafts.

There were several clay mines in the Hanging Rock preserve, but the closest to Frederick Road was called Sugar Camp Mine #4, run by the Harbison Walker Company. At its peak, Harbison Walker invested heavily in the region by building an entire village surrounding the mine on Frederick Road. This included a church, a company store, and a number of company-owned homes (for which the workers paid rent). The company abandoned the Sugar Camp Mine #4 in the 1940's, but remained in business making fire bricks at its main factory on the Ohio River in South Shore, KY.

The clay factories, like the iron furnaces, relied on trees converted to charcoal as their main fuel source. Complete clear-cuts of woodlots in the region occurred repeatedly from the early 1800's through the late 1970's. When the fuel supply became utterly exhausted by the later 1970's, the clay factories fell into decline.

Evidence of early clay mine shafts, now partially filled in with soil, are still visible at the preserve. Photo by Davey Tree Service. Photo supplied by Craig DeAtley.