

HISTORIC ROOTS

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MAKING CHARCOAL

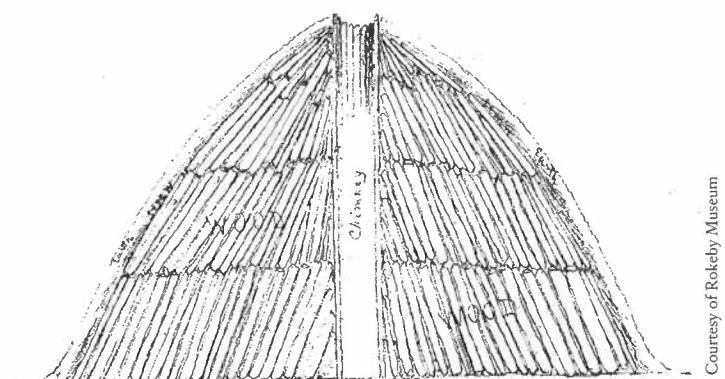
By VICTOR R. ROLANDO

Charcoal was a common fuel in Vermont until after the Civil War. Because charcoal fires burned hotter than wood fires, charcoal was used to heat blacksmiths' forges and in iron and glass foundries and blast furnaces. Charcoal could also bring locomotives "up to steam" faster than wood. And because it left little or no ash, it was used in many early Vermont homes.

Charcoal is wood that has been burned slowly in an airless environment until all its liquid has been driven off. What is left is pure carbon. Making charcoal was hard work.

Hardwood made the best charcoal; oak and maple were the top choice. Because those woods were also used for making furniture, and maple trees were needed for syrup as well, there was competition for some kinds of wood.

The most common method of making charcoal in Vermont was the mound method. To begin, the charcoal burners, or colliers, picked a flat place, about 50 feet across, that had been cleared of trees, brush, stumps, and rocks. In the center of the clearing they stood a



Making Charcoal - Section of coal pit ready for burning -

A cross-section of a mound, showing the center chimney surrounded by stacked hardwood.

6-foot log on end. They then stacked lengths of cordwood around it, leaving as few open spaces between the pieces as possible. They stacked the wood as high as the log in the center, and then sloped it away for about 15 feet. What they ended up with was a mound of wood about 6 feet high in the middle and 30 or so feet across. The colliers then completely covered the mound with a mixture of wet leaves and damp earth. If charcoal dust was available, they included this too. There was little air left under the covering, which was called a "hurdle." This mound was known as a charcoal kiln.

After the mound was covered, the colliers carefully pulled out the central log, being sure to keep the hole in the middle. Pieces of burn-



A smoldering charcoal mound. It is covered with hurdle and you can see smoke coming out of the top.

ing wood were dropped into this chimney until the stacked wood caught fire. Once it did, the colliers filled the chimney with more wood, leaving a small opening at the top.

Fire needs air to burn, so small holes, about the size of baseballs, were opened in the sides. The holes were small so they would let in only a little air at a time. This allowed the fire to smolder instead of burning fast. The colliers controlled the burning throughout the kiln by opening new holes in the sides and closing others. This slow, even burning kept the wood from burning up and allowed it to become charcoal.

Wood for charcoal was cut during the winter. The charcoal burning took place from

early spring until the start of winter. Cool, calm, dry days were the best for making charcoal. Windy, rainy days were the worst. Sometimes a strong wind would blow a hole in the hurdle. The fire would then burn too fast; the mound and charcoal would be destroyed. If the ground was damp, or if it rained a lot, the wood might not smolder properly.

The color of the smoke told the collier what was going on inside the kiln. Heavy black smoke meant that too much air was getting inside. Thin, light blue smoke meant the wood was smoldering properly. When there was no longer any smoke, the process was finished.

A collier and one helper could keep a number of kilns going at the same time. It took two men about a day to build a kiln. It took another six to eight days for the charcoal to smolder. It then took another day for the kiln to cool. With careful planning and enough wood, it was possible for colliers to keep busy building, loading, and unloading kilns, every day through the season.

Making charcoal was a dirty job. The fumes, smoke, and dust covered the workers and spread onto neighboring lands. It was also a dangerous one. If there was any spark left inside the kiln, peeling the hurdle away, which allowed air into the kiln, could cause a fire. If this happened, the charcoal would burn up, and the entire lot would be lost. The colliers kept



Courtesy of Rokeby Museum

This rough sketch was made during an actual burn near Ferrisburgh in the 19th century. You can see two colliers raking the charcoal from a cooled mound. The comment at the top says, "Men as black as the devil" — from the charcoal dust.

buckets of water nearby, to put out the fires. But they tried not to use them; water reduced the quality of the charcoal.

Although there were smaller charcoal operations all over Vermont, by the 1830s, most charcoal was made in Addison, Rutland, and Bennington counties.

Much of the charcoal made in Vermont was bought by blast furnaces, where iron was made. They preferred large pieces of the fuel, as smaller pieces tended to fill in the air spaces in the furnace, smothering the fire. Because metal tended to break the charcoal into small pieces, colliers used wooden rather than metal rakes to remove it from the kiln. They used wicker baskets

to carry it to their wagons and to their customers. Later, when charcoal was shipped to blast furnaces in Massachusetts and Connecticut, special railroad cars were designed to transport it.

Until the late 1800s, there was a huge market for charcoal. But gradually most of the blast furnaces in the country stopped using charcoal and started using coke, a form of coal. By the 1860s, there were only about 500 charcoal kilns left in the United States. By 1900, there were 50, and in 1923, the last two, in Massachusetts and Connecticut, shut down.

We can still buy charcoal, but much of what is called charcoal is really something else. It's easy to tell the difference. Real charcoal looks

Victor R. Rolando



A charcoal mound site in Ripton, Vermont. When this picture was taken, in 1985, the ground was still covered with tiny bits of charcoal.

like burned wood. It has the shape and grain of wood and is light in weight. The "briquettes" that we use in outdoor grills and campfires are really industrial waste. Things like nails, glass, raw plywood, and other materials are all held together by waste motor oil and squeezed into shape by machines. Something to think about as we dig into our hot dogs and hamburgers!

Rooting Around

There are sites of charcoal mounds and kilns all over Vermont. If you'd like to know where they are or go look for them, or if you want to know more about the charcoal industry, read *200 Years of Soot and Sweat* by Victor Rolando. Your library may have it or may be able to get it for you.