

## Beehive Ovens

Located in the Egan Mountain Range about 18 miles south of Ely, Nevada is the Ward Charcoal Ovens State Historic Park. The ovens are known for their beehive shape and were used to make charcoal from pinyon pine and juniper. They stand 30 feet high and have a base of 27 feet in diameter. The walls are 20 inches thick and have three rows of vents. They were constructed out of rock quarried directly southwest of the ovens and named for Thomas Ward who founded the local mining district.

Charcoal was used as the fuel in high temperature blast furnaces that were used to process silver ore into silver. The process, called smelting, used heat and a chemical reducing agent to decompose the ore, drive off other elements and gasses, and leave just the metal behind. The silver ore was crushed, loaded into a blast furnace, and melted into a molten liquid state. The molten material would separate into four layers based on the density of each substance. Silver lead bullion would form on the lower two levels. This bullion was drained off and poured into bars for shipment to undergo further refining and separation into pure bars of silver and lead.

The Ward Beehive Ovens replaced an older system of producing charcoal because they were a more efficient way to reduce pinon pine and juniper wood into charcoal. Each of these ovens held about 35 cords of wood. A cord of wood is four feet by eight feet. 35 cords of wood would produce about 1,750 bushels of charcoal.

The wood was cut into five to six foot lengths and stacked inside the ovens using the lower door. An open space in the center was left to serve as a chimney. After the lower level was filled, a ramp was used to haul more wood to the upper door where the wood would be stacked in the same manner. The loaded oven would be ignited and the metal door cemented shut. The vents were used to let just enough air in to suffocate the fire and produce charcoal. In about ten days, all the air vents were closed and the fire died out. Water was then poured through the chimney to cool the charcoal.

The ovens were eventually phased out completely due to depleted ore deposits and a lack of available timber. When their use as charcoal ovens ended, they sheltered stockmen and prospectors during foul weather and had a reputation as a hideout for stagecoach bandits.

## Discussion Questions

- Describe the charcoal making process.
- List the steps used when smelting silver ore into silver.
- Research how charcoal is made today. Compare and contrast the methods.
- Why would the Beehive Ovens be a good shelter for stockmen, prospectors, and bandits?

## Sources

- "Ward Charcoal Ovens." *parks.nv.gov*.
- "Ward Charcoal Oven State Park." *www.stateparks.com*.
- "Ward Charcoal Ovens." *onlinenevada.org*.