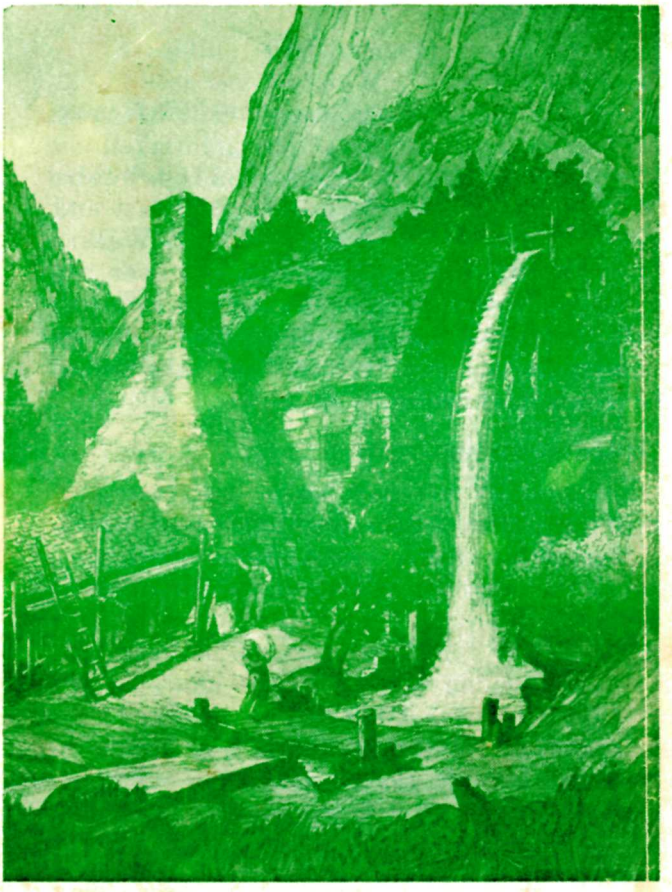
Self-Guiding Leaflet **Price .05c**

- Wilderness Road Trail -
And
Early 19th Century Iron Works
Cumberland Gap National Historical Park



An 1870 sketch by Harry Fenn showing Ironworks in operation

Here, at the base of the Pinnacle and below the saddle of Cumberland Gap, are features of the Park that call to mind the days of explorers and pioneers. Gap Creek is associated with Dr. Thomas Walker, the Gap's discover, and the Wilderness Road with Daniel Boone. The ironworks, whose furnance remains are preserved, was a going concern for much of the Nineteenth Century and in a sense was a forerunner of the Industrial development at the Gap in the 1880's and 1890's.

Creek, road and ironworks, together, have served man's changing needs in both peace and war.

This leaflet briefly tells the story and the functions of the several features. In the area of the ironworks, numbered paragraphs in the leaflet correspond to numbered stakes at points of interest along the trail.

The Trail

The one-quarter mile gravel trail leading toward the Gap is on a portion of the Wilderness Road. The preceding mile of the road dipped into Tennessee from Virginia; here it is back in Virginia beginning its climb to the saddle of the Gap and into Kentucky.

Describing this portion of the route, William Brown, a traveler of 1782, tells us: "The way through the Gap is not very difficult but from its situation travelers may be attacked in some places . . . by the enemy (Indians) to a very great disadvantage."

The trail was improved in 1792 through private donations and in 1796 was widened for wagon traffic. By that time more than 75,000 people, walking and riding horseback, had used it as a passage to the Kentucky frontier.

During the Civil War and the industrial boom that followed, the road was much used and often improved. But throughout its history it has been rough and difficult to travel.

Gap Creek

This tumbling stream emerges from Cudjo's Cave some 200 feet up the mountain.

In Dr. Thomas Walker's journal entry for April 13, 1750, he described the creek's origin as "a large Spring which falls very fast and just above the Spring is a small entrance to a large cave." Dr. Walker noted the water was "sufficient to turn a mill," and such has been the use of the creek. Through the years the stream has furnished power for an ironworks, a grist mill, a sawmill, and a wool carding mill. Its flow is now regulated by water storage facilities servicing the towns of Cumberland Gap and Harrogate, Tennessee.

Ironworks

Pre-industrial America had many of these cold-blast, charcoal-burning iron furnaces producing pig iron. At the Gap the raw materials — iron ore, charcoal, and limestone — were handy, and a small community supplied these as well as the labor for operating the furnace and the adjoining foundry.

This ironworks was in production for sixty years — its operation ending about 1880, thus making it among the last of the charcoal era furnaces.

In 1863 the Confederates used the buildings that were once here to store their ammunition while a leaky magazine was being repaired. In the 1870's the owners shipped pig iron, first in wagons to the Powell River and thence by boat to Chattanooga. New techniques in iron smelting and manufacturing contributed to the closing of the Gap enterprise.

The Furnace

(Stake No. 1)

The stack consists of an outer covering of large limestone blocks and an inner chamber where the fairly simple smelting operation took place. Into the opening at the top of the inner chamber, workmen poured the "charge" — iron ore, charcoal for fuel, and limestone for flux. The charge was introduced in alternate layers and molten metal gathered at the bottom. The molten metal was "topped" or run out through a hole under the tymp or casting arch (present entrance). The blast of air needed for burning the charcoal was introduced through

pipes in the tuyere arch (opening) at the bottom of the stack on the creek side. The green glazed stones of the lining give evidence of the intense heat when the furnace was "in blast."

In 1877 the daily production of the furnace was recorded at about three and one-fourth tons, with one ton of pig iron requiring two tons of iron ore, 200 bushels of charcoal, and one-fourth ton of limestone. Total cost of pig iron per ton was reported at $19.40. (In 1960 pig iron F.O.B. Middlesboro was approximately $70 per ton).

Casting Shed Site

(Stake No. 2)

A casting shed formerly stood between the furnace and the slag pile. There the molten iron was run into a bed of sand which had been prepared with channels and molds to receive it. The iron cooled in the molds forming ingots of cast iron or "pigs." Other objects were cast here, but none have so far been located.

Slag Pile

(Stake No. 3)

The large mound helps measure the years of operation of the furnace. The cinders or slag was formed by the chemical fusion of the limestone with impurities in the ore. During the smelting the slag floated to the top and was drawn off from time to time.

Base Supports of a Water Wheel

(Stake No. 4)

An overshot wheel furnished power to operate equipment providing air blasts. The equipment could have been either large bellows or, more likely, double cylinders.

Building Site

(Stake No. 5)

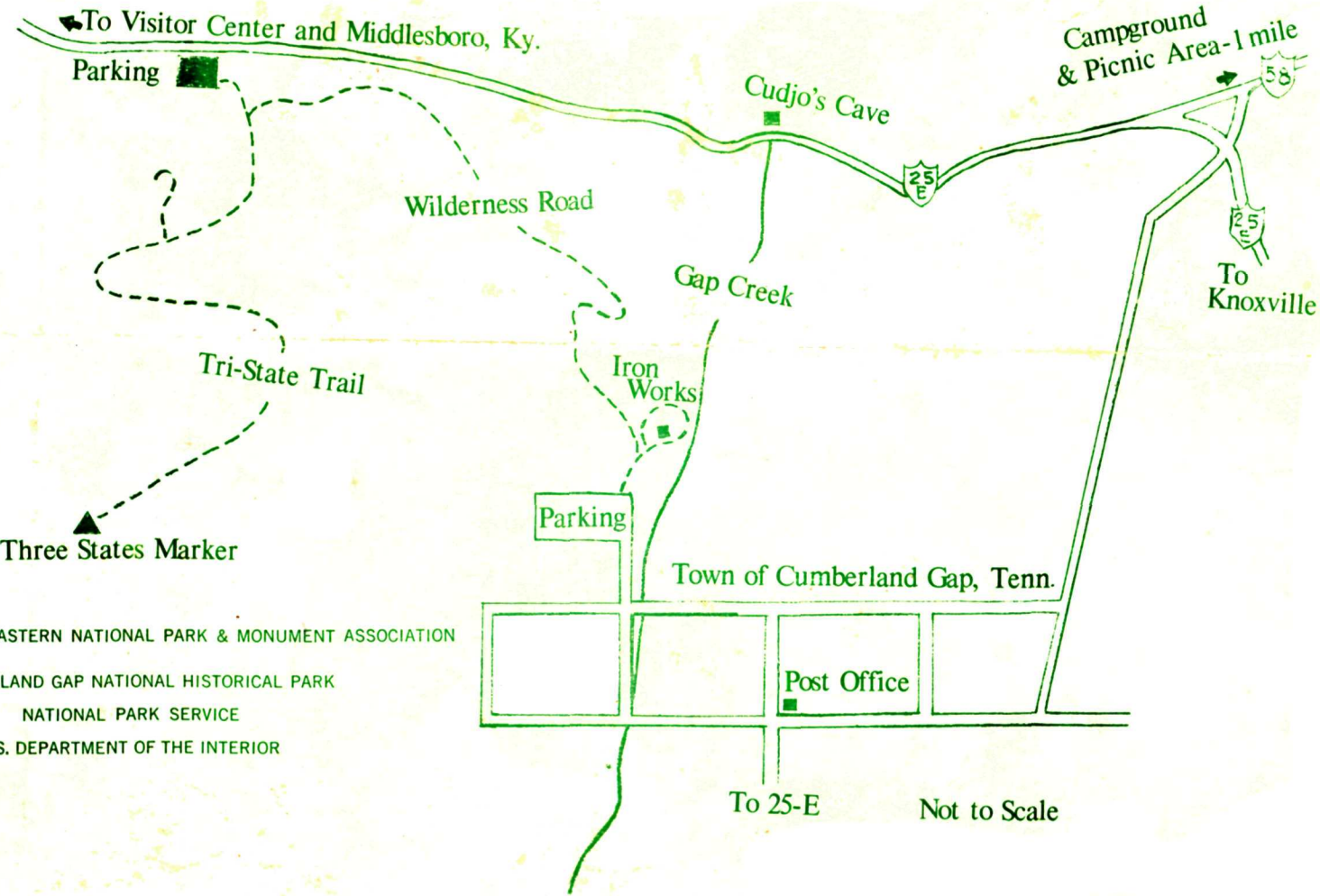
A two and a half story, frame building approximately 45 feet x 25 feet occupied the area adjoining the furnace on the north side. It probably housed the blast equipment and was a storage place for raw materials.

Stonecutting

(Stake No. 6)

This stone demonstrates the technique for cutting large stones, such as those used for the furnace stack. An iron rod remains in place, while two holes where a similar rod had been driven may be seen. A crack giving the desired straight surface has been formed. Notice the evidence of this manner of stonecutting on many of the stones in the furnace stack.

After passing the ironworks, Boone's road went straight toward the saddle of the Gap probably from the first switchback on the trail. Switchbacks become necessary due to the steepness of the terrain, when wagons began to roll over the road on the journey into the Nation's western frontier.



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