

# Hopewell Village

NATIONAL HISTORIC SITE • PENNSYLVANIA

*Hopewell Village, restored as a monument to the iron and steel industry, is a striking measure of the growth and magnitude of modern American industrial might.*

## IRONMAKING IN EARLY AMERICA

In the early days of colonial America, iron tools and household items were brought over from Europe by the settlers or imported at a high cost. The colonists, early recognizing the need to manufacture their own iron, set up a number of ironworks, notably at Falling Creek, Va., and Saugus, Mass. Operations gradually spread throughout the colonies, and by the end of the 1700's, southeastern Pennsylvania had become the industry's center. Hopewell Village, founded by Mark Bird in 1770 in time to supply cannon and shot for the Revolutionary armies, is representative of the hundreds of ironmaking communities that supplied the iron needs of the growing nation.

## CHARCOAL IRON

Until surpassed by more modern methods, cold-blast charcoal-burning furnaces, such as that at Hopewell, supplied all the iron. These furnaces consumed about an acre of trees a day for fuel,

so they had to be located in rural areas close to a timber supply.

Since the pig iron produced by these furnaces had a limited use, much of it was sent to forges (such as Valley Forge) to be made into the tougher and less brittle wrought iron. This was used to make tools, hardware, and horseshoes, while pig iron was cast into utensils such as kettles and stoves.

## HOPEWELL FURNACE

In an age when most businesses were operated by one or two men in a shop, Hopewell employed at least 65 men, with some responsible for two or more jobs. As the nearest town was many miles away, the ironmaster built a store to supply his workers, many of whom lived in company-owned homes. The ironmaster's house was built near the store and furnace, so that he could keep a close watch on operations. Between 1770 and 1883, the managers made several attempts to modernize Hopewell Furnace and remain competitive, but the growth of city foundries able to produce castings at lower costs forced them to cease operation. And those furnaces not on major transportation routes failed because of the very developments they themselves had helped to create.

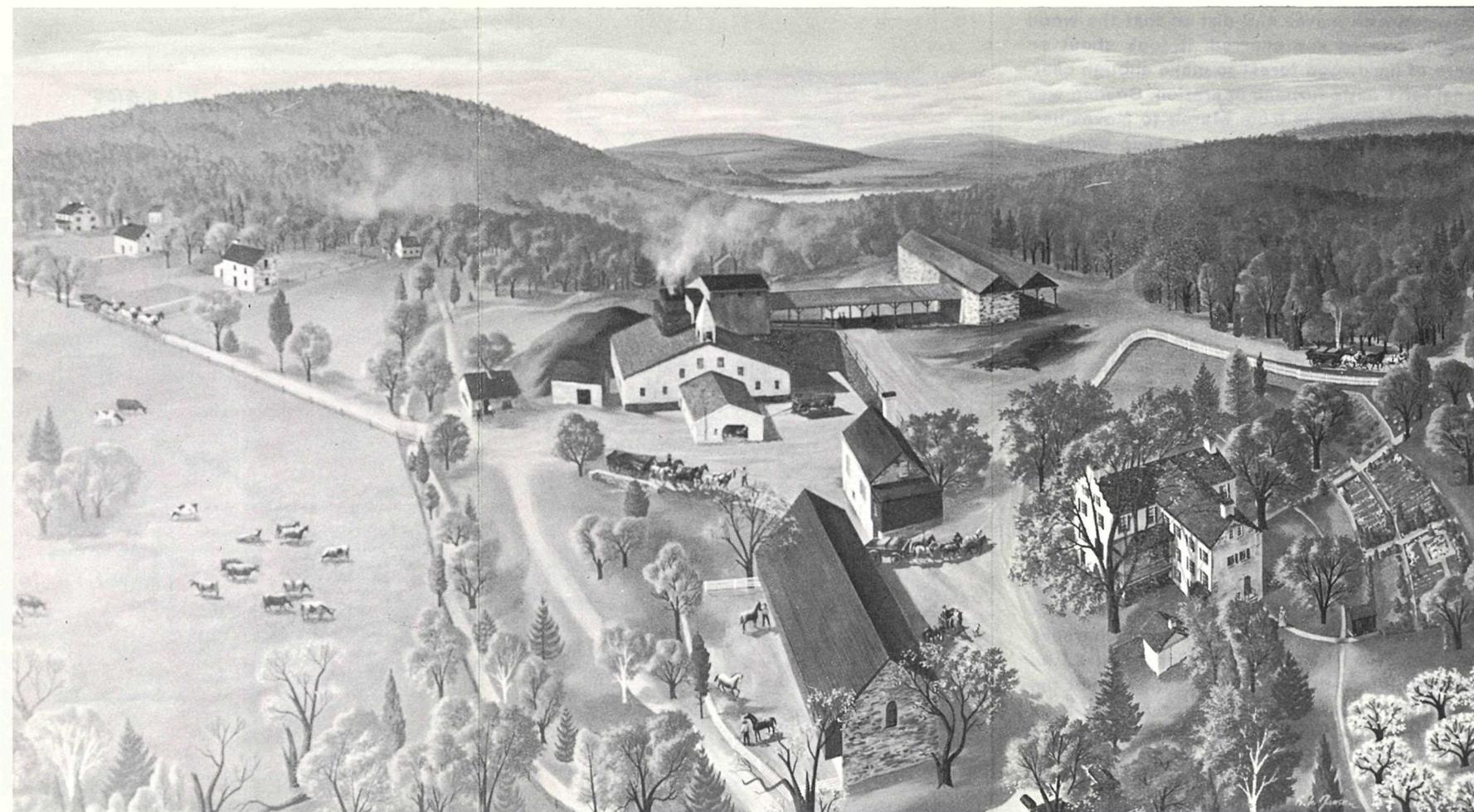
## THE VILLAGE TODAY

The restored stone buildings and the reconstructed wooden ones present an authentic picture of the social, cultural, economic, and industrial life in an ironmaking community of early America, and reflect the humble but ingenious beginnings in our country of this basic industrial enterprise. Hopewell has been restored by the National Park Service to its appearance of 1820-40.

## ADMINISTRATION

Hopewell Village National Historic Site is administered by the National Park Service, U.S. Department of the Interior. Inquiries and communications regarding this site should be addressed to the Superintendent, R.F.D. 1, Elverson, Pa. 19520.

**THE DEPARTMENT OF THE INTERIOR**—the Nation's principal natural resource agency—has a special obligation to assure that our expendable resources are conserved, that renewable resources are managed to produce optimum benefits, and that all resources contribute to the progress and prosperity of the United States, now and in the future.



## A TOUR OF HOPEWELL VILLAGE

The following numbered tour will serve as your guide through the village. We suggest that you stop first at the visitor center, where exhibits, a slide talk, and samples of ironwork help tell the story of Hopewell, its people, and the charcoal iron industry of young America.

**1. Village roads** are historic wagon roads. Just below the visitor center is the 1757 Valley Forge-Reading Road. After 1825 it also connected with the Schuylkill Canal.

**2. Coaling shed and charcoal house.** As fuel, Hopewell Furnace used charcoal, made in the nearby hardwood forests. While still hot, it was hauled by teamsters into this shed in wagons that were dumped by pulling out the bottom boards. After cooling, it was stored by a stoker in the charcoal house.

**3. Anthracite furnace.** In 1853 a furnace was built here to use a new ironmaking technology imported from Britain some years before. Larger than the charcoal furnace, it used anthracite fuel and a blast of preheated air. The hot-blast process could produce more iron than the charcoal process. However, since this furnace could not successfully smelt Hopewell ore, it was abandoned, and Hopewell Village relighted its charcoal furnace.

**4. Charcoal hearth.** In the woods, on hearths like this, colliers made charcoal for fuel for the furnace. Wood was piled in large mounds and covered with leaves and dirt so that the wood slowly burned and charred. It took about an acre of hardwood forest to make enough charcoal for 1 day's furnace operation. Coaling was done in the woods from March to November; colliers lived in nearby huts to keep constant watch on the piles.

**5. Water wheel and blast machinery.** Water from Hopewell Lake comes by way of the West Head Race to turn this water wheel, which operates the blast machinery. Rods attached to the axle of the water wheel move pistons inside the wooden tubs, forcing air into an equalizing box between the tubs. From this box, the blast passes through the pipe to the furnace. This blast fanned the flame in the furnace, speeding the ironmaking process: the more iron the more profit.

**6. Connecting shed and bridge house.** Teamsters dumped charcoal for spring-through-autumn use under this open shed. The rest of the furnace charge—iron ore and limestone—was stored on the furnace bank near the charcoal house. Fillers brought the ore, charcoal, and limestone through the bridge house and dumped it into the tunnel head, the hole at the top of the furnace. Each man worked a 12-hour day; every 24 hours the fillers put in about 380 bushels of charcoal, 4½ tons of ore, and some limestone, which made 2¼ tons of iron and 2½ tons of slag.

*From the connecting shed you can walk along the furnace bank and go down the steps to the lower level where Hopewell Furnace stands.*

**7. Casting house.** Here liquid slag, floating on the molten iron within the furnace, ran into pits on your left. Cooled hardened slag was dumped outside. The iron flowed into a pig bed on your right. Until 1845, molders also ladled iron into sand flasks and patterns in the room to your left. From 1845 until its final blast in 1883, Hopewell produced pig iron that nearby forges hammered into bar iron. In the front cleaning shed, women brushed stove plates before laborers boxed them for shipment. Examples are shown here in the casting house.

**8. Tuyere (twoe-air) arch.** Proceed under the bridge house. Here you can see how the air blast entered the furnace. To hear its swoosh, place your ear near the pipe as the wheel moves the pistons. The fire was above this tuyere, the molten products below.

**9. Blacksmith shop.** Near the furnace is the tile-roofed blacksmith shop. These are period tiles; note the runoff grooves that the potter made with his fingers before baking the clay. The blacksmith hammered red-hot wrought iron into tools and hardware for the community and shoes for the horses that hauled supplies to the village and products to market.

**10. Tenant houses.** Beyond French Creek—whose dammed waters form Hopewell Lake, 1,200 feet upstream—are survivors of several

dozen company houses once occupied by furnace workers. The first one is furnished. Other tenant houses were scattered over the 5,000 acres of furnace properties. Most workers, however, lived nearby in their own houses.

**11. Stone bridge.** Going toward the barn, you pass a stone bridge under which French Creek flowed. Now, only the tail-race water flows under it to the creek beyond.

**12. The office store** (now furnished) was the nerve center of the village. Here a clerk kept the furnace records and sold nearly everything needed by the workers, their families, and the neighbors of Hopewell.

**13. Barn.** Horse-drawn wagons carried the products and supplies of Hopewell Village. Even this large barn was too small to shelter enough horses and their feed, so more than half the horses and wagons were hired in 1830. Stables are on the lower level; mows for hay and grain are above.

*From the barn, you can make a short loop to visit the springhouse and bake ovens, or you can go directly to the Big House.*

**14. Springhouse.** Cool waters from the springhouse supplied the ironmaster and his family with drinking water, and the trough in the middle room was the refrigeration unit for the Big House.

**15. Big house, kitchen, and bake ovens.** The owner, or his manager, lived here in the Big House. Three first-floor rooms are furnished with furniture once in the house. In the back-basement kitchen, furnished with cooking utensils of the period, the servants cooked for the workers who boarded in the Big House.

Behind the Big House are the bake ovens that were heated by wood fires. When the ovens reached baking temperature, the coals were raked into ashpits, bread dough inserted, and the doors closed. A baker's peel, a long paddle-like utensil, was used to insert and remove the baked goods.

**16. East Head Race and garden.** Returning to the visitor center, you cross a race that carried water to help power the water wheel from 1772 to 1883. Flowers, herbs, vegetables, and fruits grew on these terraces. Ruins of a greenhouse are to the right as you go up the steps.

## ABOUT YOUR VISIT

Hopewell Village is 5 miles south of Birdsboro, Pa., and 10 miles from the Morgantown Interchange of the Pennsylvania Turnpike. The site is open from 9:30 a.m. to 5:30 p.m. daily. From May 31 to July 1, it is open until 7:30 p.m. on Saturday and Sundays. From July 1 through Labor Day, it is open daily from 8 a.m. until dark. Groups should make advance arrangements with the superintendent.

