A Backward Glance At Iron

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As we prepare to celebrate our national Bicentennial, the iron industry of Western Kentucky and Tennessee which existed for a century merits a backward glance. The ruins of Center and Great Western Furnaces in the Land Between the Lakes, the chunks of glassy gray to blue slag found at the deserted furnace sites, and the few pieces of iron may appear to some viewers as foreign pollutants to the natural beauty of the landscape. To others possessing an imagination, the furnaces are monuments to the thriving iron industry erected by adventurous men. The slag tells of hundreds of workers who chopped or dug in the forests and hills surrounding the furnace communities. The remnant iron pieces remind us that the industry cast iron needed for household goods and farm implements in the area.

In the national scope of the iron industry, this area has little significance, but it was representative of many similar iron industries which flourished on the scene of our American economy during the nineteenth century. Pig iron produced here was guided down the rivers for export to England. Ore was made into machines which ran on the ribbons of steel tying the nation together. Locally produced cane kettles were shipped to Cuba and Louisiana.

Although the English planned for the American Colonies only to produce raw materials and ship them to England to be manufactured, an exception was made early for pig iron to be shipped to England in quantities. In 1750, Parliament passed the Iron Act prohibiting the erection of new iron mills, plating forges, and steel furnaces in the Colonies. These restrictions were generally ignored as the Colonists were producing one-seventh of the world production in 1750.[1]

Most of the early furnaces and forges were small and were analogous to the local sawmill or gristmill, in that they furnished iron in the kinds and quantities needed in the community. Following the Revolution, as settlers pushed over the mountains into the old Northwest and South, they lived in primitive frontier conditions similar to those of the early Colonists along the Atlantic seaboard. Iron was scarce, especially in the remote districts. Consequently, one of the first concerns of settlers was to establish an iron industry.[2]

Eastern Kentucky and Tennessee were settled much earlier than the areas west of the Tennessee River. The Western Districts were opened for settlement about 1820. Prior to this these lands were held by the Chickasaw Indians and were used primarily for hunting grounds. Thus, the settlements along the Tennessee River were the "jumping off place" for pioneers until about 1820. According to Jefferson, iron mines were "on Kentucky" between the Cumberland and Barren Rivers, and also "between the Cumberland and Tanisee" before the Revolution.[3] However, it was many years before the Western Iron Belt which was fifty miles wide and one hundred ten miles long was developed to any extent. Most of the area was east of the Tennessee River extending

from northern Alabama through Kentucky. In Tennessee, the iron belt included these counties: Hardin, Lawrence, Wayne, Lewis, Perry, Decatur, Hickman, Humphreys, Benton, Dickson, Montgomery, and Stewart.[4] The industry drew investors from New Jersey, Ohio, and Pennsylvania into the area, provided work for the early settlers, and influenced the cultural and social development of both states.

The first Tennessee furnace was old Cumberland Furnace in Dickson County built by General James Robertson in 1793. Young Montgomery Bell came to Tennessee from Pennsylvania to manage the furnace. Cumberland was operated by several owners including Bell, Anthony Vanleer, J. P. Drouillard and the Southern Iron Company.[5] The April 7, 1808, "Impartial Review" of Nashville included this notice from Montgomery Bell about Cumberland Furnace:[6]

> I will pay fifty cents cash per cord for chopping wood, and contract for any number of cords not to exceed five thousand. Want to hire eight or ten negro fellows by the year, for whom I will give a generous price.

Two other furnaces were built in 1830. One was Bear Spring located five miles east of Dover. It was wrecked by Union forces in 1862 and rebuilt in 1873, resuming operations until 1901. The other furnace was built in Hickman County but operated only a short time.

In the spring of 1833, Fair Chance Furnace in Humphreys County was erected on Big Richland Creek by John Lindsay Sullivan, Anthony Vanleer, and Daniel Hillman. Depletion of ore deposits and transportation costs caused the furnace to close in 1835.[7]

The village of Model in Stewart County, Tennessee, was located at Great Western Furnace which was built in 1859 by Brian and Newell and Company.[8] Operations were discontinued after four years due to increased costs of production. This furnace still stands at the base of a hill in the east side of the South Trace of the Land Between the Lakes. Another attraction reminiscent of an era before the mid-nineteenth century is the herd of buffalo living on a range adjacent to the Trace.

Captain Mockbee's sketch of recollections of the iron industry from the eighteen forties until the Civil War was enlightening. He was a son of John H. B. Mockbee, owner of Randolph Furnace on Lick Creek in Stewart County, and recalls life there from the age of five. His uncles also had furnaces in Stewart, Montgomery, and Dickson Counties, Tennessee. He lived at Carrol Furnace with a cousin, Robert Baxter, Jr., to attend school.[9] He explained the arrangements for labor at the iron works. Most of the men were slaves, but many white men worked for wages in the more skilled jobs.

The management started out on horseback soon after Christmas to visit slave owners for miles around to secure labor for the coming year. Slave labor was priced from one hundred fifty dollars to two hundred dollars a year. Training and experience determined the price with good teamsters bringing even more. This was paid to their masters. The slaves were given two or three suits of clothes, one hat, three pairs

of shoes, and one blanket. They were paid cash for Sunday work and overtime and the value of clothing not used. A few young white men were hired out by their fathers.

Weekly rations allowed each slave were seven pounds of bacon, a peck of meal, and a quantity of molasses. They often bartered part of these rations to shiftless white folks nearby for melons, eggs, or anything they fancied. The employer supplied medical aid by employing a physician by the year to care for the men. Slaves owned by the proprietors received the same allowances and were paid overtime for extra work.[10]

Many furnaces had several owners as the builders moved from place to place. The Clarksville (Tennessee) **Jeffersonian** issues from November 2, 1850, through July 26, 1851, contained notices of furnaces and forges for sale. Some of these were Clay Forge, Louisa Furnace, Mt. Vernon Furnace, Tennessee Furnace, and Water Forge. An agent, Mr. Priestly, advertised the sale of Louisa and Mt. Vernon Furnaces for the heirs of Robert Baxter, Sr., an uncle of Capt. Mockbee.[11]

There were forty-two furnaces in Middle and West Tennessee. West Tennessee had less than a dozen refinery forges and two bloomaries between 1825 and 1860. The Cumberland Rolling Mill operated in Stewart County from 1829 until 1856. Many of the furnaces destroyed by Union Armies never were rebuilt because of the plight of the area during the Reconstruction era.

The first furnaces in Western Kentucky were operating in Trigg, Lyon, Hart and Livingston Counties before 1837, but their exact locations were not given. The first furnace on the lower Cumberland River was established by Matthew Lyon who had worked in iron with Ethan Allen. Some of the early furnaces were Hopewell in Livingston County, Empire, Suwanee, and Fulton in Lyon County, and Cobb in Crittenden. The Lyon County iron ore beds were probably the deepest and most inexhaustible in the area east of the Mississippi and south of Lake Superior.[12] Kentucky counties in the iron area were Calloway, Marshall, Trigg, Livingston, Crittenden, Lyon, Caldwell, and Christian.

William Kelly came to Lyon County in 1846 after marrying Miss Gracy of Eddyville. William Kelly and his brother, John Kelly, sold their mercantile business in Pittsburgh and bought 14,000 acres of timberland and a furnace from R. L. Cobb.[13] They operated the Eddyville works and developed Suwanee and Union Forge Iron Works. William invented cast iron elastic molds in which sugar kettles were made. Union Forge iron went to Cincinnati.

The original spark which helped launch the Steel Age in America came from Kelly's observation. He noticed that although the air blast in his refinery fire furnace was blowing on molten iron with no charcoal covering, the iron became white-hot. From studying chemistry and metallurgy earlier, he knew oxygen was combining with carbon to produce heat. Secretly, he built and tore down seven converters deep in the forests to avoid his father-in-law's scrutiny.[14] About 1850, he invited ironmakers of the Cumberland Valley to a demonstration of his

"pneumatic process" of applying air to molten iron at which he had a blacksmith make a horseshoe and nails. Two Englishmen, witnesses of the demonstration, left suddenly and were traced back to England.[15] William Kelly applied for a patent for his process in 1857 after Bessemer had received an American patent for a similar process.[16] Kelly's patent was granted on proof of earlier use of the process. Later, he moved to Pennsylvania and his converter is still at the Johnson plant, a part of Bethlehem Steel Corporation.

Kelly abhorred slavery and knew the best slaves were those most likely to run away to freedom at the Ohio River just forty miles away. To help solve this problem, he imported at least ten Chinese laborers through a Philadelphia tea merchant. Plans were being made to import fifty other Chinese when national difficulties arose preventing their coming.[17]

Thomas Tennessee Watson was another rich ironmaker in Kentucky. He built Empire Furnace in 1841 on the Cumberland River. The site is now under the waters of Lake Barkley. It was Dr. Watson who formed a partnership with Daniel Hillman, Jr., in 1842. Hillman was descended from generations of Dutch ironmasters and became extremely wealthy in iron. Daniel Hillman named a son Thomas Tennessee Hillman, for Dr. Watson.

Daniel Hillman's influence was the greatest over the entire Western Iron Belt because of his extensive holdings. Empire Coal Company produced bar and sheet iron, supplying eighty per cent of the southern foundries from 1856 to 1862. The company reportedly cleared $1,300,000 during that time. The Tennessee Rolling Works operated for forty years in Lyon County. Among other products, locomotive boiler plate was produced in this mill. Among Hillman's holdings were Empire, Center, and Fulton Furnaces. He remarried after the death of his first wife, Ann Marable. He died in 1883 at 76 and his widow, Mary Gentry Hillman, was then 42. She lived alone in the family home until her death in 1902.[18]

Thomas Tennessee Hillman spent his boyhood years in Kentucky and attended school in Nashville. During the Civil War, he managed Center, Empire, and Fulton Furnaces for his father. Center operated almost all through the War although Union and Confederate bullets both whizzed about it. A riding accident prevented his military service. He married his step-mother's younger sister, Emily Gentry, and moved to Nashville in 1879. Dissatisfied out of hot iron, he moved to Birmingham where he built the famous Alice Furnace and later Big Alice Furnace. Finally, he became First Vice-President of the Tennessee Coal, Iron, and Railway Company. The Tennessee Company was absorbed into the United States Steel Corporation. T. T. Hillman died in Atlantic City, New Jersey, in 1905. He was the last of the outstanding men in the iron industry to have lived in Western Kentucky.

As the resources were depleted in the vicinity of the furnaces, new furnaces were erected. In the eighteen fifties, Laura Furnace was built in Trigg County one-half mile north of the Tennessee Line. Miss Maud

Nance of New Concord, Kentucky, owns a kettle made at this furnace. It belonged to the Marberry family in the eighteen sixties. Laura reportedly was sold to George P. Wilcox about the time of the Civil War.[19]

Gerard Furnace was built in Calloway County on Shannon Creek in 1854 by Browder, Kennedy, and Company. Partners in the company were David Browder, D. W. Kennedy, John Barker, James B. Townley, Joshua Cobb, and W. C. McClure. They owned almost 3,000 acres which were known as "coaling lands" to local residents.[20] Only the base of the chimney is visible today. An older citizen recalls playing there on several large iron pieces about two and one-half feet tall and six feet in diameter.[21] J. H. Perkins has a pot used in the camp's cooking shack located one hundred yards east of the furnace. Gerard was operated by slave labor. The furnace did not operate after 1858.[22]

Center Furnace had the longest period of operation. The last era of operation was from 1905 through the blast cycle of 1912. White and Dixon Company leased the furnace and lands from the Hillman Land and Iron Company. The discovery of richer ore deposits and more modern methods of production contributed to the decline of the iron industry in the Western Kentucky and Tennessee area.[23]

Many entrepreneurs in iron came to this field, exploited the natural resources of the area, which are few, and took their profits to other more promising fields. The Hillman Company sold the second growth of timber for railroad ties.[24] A 50,000 acre area once was considered for a Resettlement Program in Kentucky, but this was abandoned.

This backward glance into the iron industry reminds us of the ingenuity of a few and the stamina of many. Consider the physical strength of those who cut trees, tended the charcoal pits, and fed the furnaces. Consider the courage of river pilots winding their ways down the Cumberland, Tennessee, Ohio, and Mississippi Rivers. Consider the complex problems of management striving to operate successfully under extremely difficult circumstances. Our society is better today than in the years of the iron industry, largely because men of that time made a positive contribution to the age in which they lived and helped lay the foundation for our standards of living today. Knowledge of the past helps us understand the problems of today as we look forward to a better tomorrow.

1. Douglas Alan Fisher, **The Epic of Steel** (New York: Harper and Row, 1963), p. 85.
2. **Ibid.**, p. 90.
3. Emory Q. Hawk, **Economic History of the South** (New York: Prentice Hall, 1934), p. 300.
4. **History of Tennessee** (Nashville: Goodspeed, 1886), p. 35.
5. Anon., "Furnaces and Forges," **Tennessee Historical Magazine,** Vol. IX, October 1925, p. 190.
6. Albert C. Holt, "The Economic and Social Beginnings of Tennessee," **Tennessee Historical Magazine,** Vol. VIII, p. 37.
7. Jill Knight Garret, **A History of Humphreys County Tennessee** (Columbia, Tennessee: The Author, 1962), p. 57.
8. Doris Crutchfield, "Land Between the Lakes," p. 2. (Mimeographed.)
9. Anon., "Furnaces and Forges," p. 191-192.
10. **Ibid.**, p. 191.
11. Notice in the Clarksville **Jeffersonian,** January 1, 1851.
12. Lewis Collins, **History of Kentucky** (Frankfort: Kentucky Historical Society, 1966), Vol. II, p. 490.
13. Samuel M. Wilson, **History of Kentucky** (Louisville: S. J. Clark, 1928), Vol. II, p. 70.
14. Dumas Malone, ed., **Dictionary of American Biography** (New York: Scribners, 1932), Vol. X, p. 311.
15. Ed Huddleston, **The Land Between the Rivers** (Nashville: Nashville Banner, 1957), p. 1. (A pamphlet reprinted from the Nashville **Banner,** September 1957.)
16. Corinne Whitehead, "William Kelly and the 'Air Boiling' Process of Steel Making," **Journal** of the Jackson Purchase Historical Society, Vol. I (June 1973), p. 30-35. A detailed article on William Kelly.
17. James G. Wilson and John Fiske, eds., **Cyclopedia of American Biography** (New York: Appleton, 1887), Vol. III, p. 508.
18. Huddleston, p. 11.
19. Crutchfield, p. 2.
20. Calloway County Deed Book H, in the Office of the County Clerk, Murray, Kentucky.
21. Interview with Miss Hontas McCuiston, February 1974.
22. Interview with Brown Tucker, February 1974.
23. From "The Iron Industry in Land Between the Lakes," a pamphlet available at Center Station in the LBL which contains details of this method of iron production.
24. Paducah **Sun-Democrat,** November 11, 1935, p. 6.