

A GUIDE TO THE OLD STONE BLAST FURNACES IN WESTERN PENNSYLVANIA

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PART III

FAYETTE COUNTY

ALLIANCE FURNACE*

The first iron furnace to be erected west of the Allegheny Mountains was the Alliance Furnace. It was built by William Turnbull, John Holker and Peter Marmie on Jacobs Creek. The stack stands on the Fayette County side of the creek, 2½ miles above its mouth. Area of the land on which the furnace was built was 301 acres. This, together with two other tracts of 301 and 219 acres, was patented to William Turnbull of Pittsburgh, July 13, 1789. Construction of the furnace was started before title to the land was acquired. The furnace was blown in during November 1789. A tract of 223 acres in Tyrone Township was bought by Turnbull and Marmie in 1791.

William Turnbull had been a purchasing agent and commissary for Pennsylvania troops during the Revolutionary War. John Holker came to this country as Consul General of France and Agent General for the French Navy under Count d'Estaing during the Revolutionary War. After the war he remained here and went into business. Peter Marmie came in 1778 from Rouen, France, where he had worked with Holker. He acted as his confidential secretary until 1783, when he became a partner with Holker, Turnbull and Robert Morris in the firm of Turnbull, Marmie and Company. Marmie managed the business while Turnbull and Holker spent most of their time in Philadelphia.

On January 6, 1792, General Henry Knox, Secretary of War, suggested to Major Isaac Craig, Commandant at Pittsburgh, that he buy "shot for the six pounders from Turnbull and Marmie." Fifteen days

*The Historical Society of Western Pennsylvania has in its archives twenty-eight letters representing correspondence between John Holker, Peter Marmie, William Turnbull and others, and reports regarding Alliance Iron Works, Antietam Forge, etc. These documents, dated 1788 to 1814, were discussed by Dr. E. Earl Moore in THE WESTERN PENNSYLVANIA HISTORICAL MAGAZINE, 42: 225-239 (1959).

later he said, in another letter, "I am not sorry that you ordered those [shot for the six-pounders] from Turnbull and Marmie. Let them send their proposals at what rates they will cast shot, shell, cannon, howitzers, etc." Shot and shell for Mad Anthony Wayne's expedition against the Indians was furnished by Turnbull and Marmie from their works on Jacobs Creek.

In 1797 Turnbull retired, conveying to John Holker all the property. Holker and Marmie continued the operations until 1802. The furnace was called variously "Jacobs Creek Furnace," "Alliance Furnace," "Alliance Iron Works," "Turnbull's Iron Works" and "Colonel Holker's Iron Works." The latter name was used after Turnbull retired.

Remaining portions of Alliance furnace may be reached by following Pa. 51 south to Pa. 981 to the east. This road joins Pa. 51 about 200 yards south of the intersection of Pa. 51 and Interstate 70. Follow Pa. 981 for 2.1 miles to Second Street in Smithton and turn right. You now will be on L.R. 64122, which you will follow for 2.2 miles to the village of Jacobs Creek. There turn right and go 0.3 mile to a bridge to the right over Jacobs Creek. Cross the bridge and follow this road, L.R. 26015, for 3.6 miles to a dirt crossroad, turn left on this dirt road which is T-568. There is a white house at the intersection and a garage. It is about $1\frac{1}{4}$ to $1\frac{1}{2}$ miles from this point to the furnace. A jeep could go all the way but a conventional car might not succeed. Walk (or drive) down this dirt road to the railroad track. Turn left and follow the road parallel to the track to the railroad bridge. Continue on the road, under the bridge and down the hill to the creek. The furnace is about 50 feet to the right of the road and about 100 feet from the creek. There is a large stone retaining wall on the hillside near the furnace and above that are the stone walls of the charcoal house. Two walls of this building are of fabricated stone and about three feet thick, while the other two walls are the cliff formed by cutting back into the hill. Upstream from the furnace the millrace can be traced through the field, while across the road downstream are piles of slag. Parts of three walls of the furnace are standing. The inner stack is in good condition. You can see three or four feet of glassy stone lining.

The condition of the slag leads us to believe that the operation of this furnace was not efficient. All of the slag in view has pieces of charcoal, wood and iron ore in it. This has been observed only occasionally at other furnaces.

BREAKNECK FURNACE (FINLEY FURNACE)

Was built on Breakneck Creek by Miller, Rogers and Paull in 1818. Out of blast about 1837 or 1838. The site of this furnace now is under water.

To reach the neighborhood follow L.R. 26044 east approximately 3.2 miles from Pittsburgh Street in Connellsville about 0.2 mile beyond intersection with L.R. 26127. You will see a dam in Breakneck Creek on the left. The furnace site is about 100 yards above the dam. Stones from the furnace were used to build the dam.

CENTER FURNACE (DUNBAR FURNACE)

When built in 1815 by Isaac Meason this furnace was called Dunbar Furnace. It is now in poor condition. All of the stack except part of the base has fallen into Glade Run. The charcoal house, the wheel pit, millrace and cast house foundation are still discernible. Across Glade Run are quantities of slag and a large stone retaining wall.

To reach the scene follow L.R. 26047 3.8 miles south from the railroad crossing in Dunbar. L.R. 26047 ends at a crossroad which is numbered T-543. Turn left on T-543 2.1 miles. Continue left on T-543 0.4 mile to where a lane starts down the hill to the right. Park here and follow the lane on foot. This road is T-726 but probably is not marked. As you near the bottom of the hill, you will see Dunbar Creek below the road on the right. At the junction of Dunbar Creek and Glade Run, cross Dunbar Creek. The old ruins are in the forks of the creeks and on the west bank of Glade Run. Charcoal house remains are on a ledge above the ruins of the furnace. High above the charcoal house and in the face of a cliff is the entrance to a small cave. The scenery around this furnace is beautiful.

COOLSPRING FURNACE

Constructed about 1820 or perhaps earlier by Thomas McKean on Shutes Run in North Union Township, this furnace was small but operated for many years. About 1855 F. H. Oliphant bought it and kept it in blast almost continuously until 1860. It was then blown out and abandoned because of uncertain water supply. Part of the lining remains and a large amount of slag. The cut stone of the exterior was used in the reservoir dam which was built a few hundred yards below the furnace.

To reach the furnace from Uniontown go east to East Uniontown and use T-517. This becomes L.R. 26115. Follow through Coolspring.

East of the village where the road starts up the mountain, a hard road goes to the right, after you pass a reservoir. Follow this road to its end. Go through the yard of the large white house on the right (after obtaining permission) to the back of the property. Continue straight ahead into densely wooded area along the creek. The stack easily is seen about 150 feet within the woods. Part of the old millrace and tailrace also still can be seen.

This furnace had a 7-foot bosh and was 33 feet high.

ETNA FURNACE

Thomas and Joseph Gibson erected this furnace in 1815 on Trumps Run, one mile from Connellsville and $\frac{1}{3}$ mile from the Youghiogheny River. It went out of blast in 1840 (1836 by another authority). John Gibson, father of Thomas and Joseph Gibson, helped Isaac Meason build Union Furnace.

This site is at the end of Etna Street which runs parallel with Pittsburgh Street one block west. The furnace site now is covered with 20 to 30 feet of fill.

FAIRCHANCE FURNACE

Was built by John Hayden in 1803 or 1804 and sold to the Oliphants in 1805. It was rebuilt several times and was blown out in 1887. This furnace was one of the first to have preheated blast. The air for the blast passed through a pipe that was 150 feet long. One cold day, when the furnace was freezing at the tuyeres, John Hayden, the owner, built a fire under the pipe. The trouble cleared immediately, but Mr. Hayden did not develop his discovery and it was many years before the preheated method was an accepted practice.

To reach this furnace follow U.S. 40 east from Uniontown to Hopwood and turn south on T-626 through Fairchance. At the intersection of T-626 and L.R. 26181 in Fairchance turn right 200 to 300 feet. Just before reaching the railroad track turn right into a cinder lane. About 200 feet down this lane is a pile of stones, slag and rubble. This is all that remains of Fairchance Furnace. The millrace and the tailrace can be traced. A flat area on the hill above the pile of stones was the charging bench. There is considerable cinder between the furnace site and the tracks.

FAIRFIELD FURNACE

Was set up by John Hayden in 1792, on Georges Creek, in a section called White Rock Hollow. It was bought by the Oliphants in 1805

and was blown out in 1827. Only a small pile of stone and rubble remains to mark the site.

To reach the location go east from Uniontown to Hopwood on U.S. 40. Turn south on T-626 near the eastern edge of Hopwood and follow this road south to Fairchance. At the northern edge of Fairchance turn east on T-411 about 0.4 mile. The furnace site is to the right across the creek and to the right of a bridge over the creek. Certain of the old houses near the site were homes of furnace workers. The site was pointed out to us by John Artis, 72, whose grandfather was employed at the furnace.

FAYETTE FURNACE (BUCKS RUN FURNACE)

Some discrepancies appear in the histories about this furnace. One account says it was built in 1815 by Freeman, Linton and Miller. Another account says it was built in 1827 by James Rogers and Associates. By 1832 its ownership had passed to John and George Rogers who "employed 40 to 50 hands" and "produced pigs and castings about 500 tons." The furnace was blown out about 1840. Both the exterior and the interior of the stack are in excellent condition.

To reach this furnace go 0.2 mile south from the junction of Pa. 711 and Pa. 381 in Normalville. Turn east (left) on Pa. 653 until you cross the bridge over Indian Creek. At the east end of the bridge go left on L.R. 26059 one mile. When L.R. 26059 turns left continue straight ahead on a dirt road, T-685, about 0.3 mile to a creek. This is Bucks Run and the furnace sets about 100 feet to the right of the road and on the bank of the creek. Capacity was 2 to 3 tons a day.

LITTLE FALLS FURNACE

Built about 1801, on Arnolds Run (now Furnace Run) by Nathaniel Gibson, the name was later changed to "Franklin Iron Works." The furnace never was successful; in fact, it is doubtful if it ever made iron. The forge built about the same time was a profitable business and continued in operation for many years. In 1825 F. H. Oliphant bought the plant; after a few years he sold it to Miltenberger and Brown, who operated it until 1839, when the works was shut down permanently.

Mr. Gibson constructed a large house close by the forge and furnace. It was one of the first large mansions built in the Monongahela Valley. The house burned a few years ago, but its thick stone walls still are standing.

To reach this site follow Pa. 711 west from Connellsville through

Vanderbilt. About 1.1 mile west of Vanderbilt turn sharply right on L.R. 26141 0.3 mile, then left on L.R. 26123 0.7 mile to a road, T-666, to the right. Follow this road to the furnace site. You can drive to where the road crosses the creek but will have to walk the rest of the way. After crossing the run the road goes up over the hill and down to the railroad along the river. Gibson's house stands near the tracks and downstream from the furnace run. About halfway between the house and the run is where we believe the furnace must have stood. At this place is a pile of stone and rubble. When the fill for the railroad was put in, the stack was almost covered. Only the top of the furnace now shows above the ground. Across the creek are extensive ruins which probably were part of the forge and related works.

MARY ANN FURNACE

Was built about 1800 by Messrs. Martin and Lewis on a branch of Mountain Creek. Joseph Victor bought it in 1818 and rebuilt it. He changed the name to "Fairview." It went out of blast about 1840. Its capacity was $1\frac{1}{2}$ tons a day. Ruins of the stack stand in an open field a short distance from the road and clearly visible from it.

To reach this location go south from Fairchance on L.R. 26181 to Haydentown. In Haydentown L.R. 26181 makes a sharp right turn around an old log house. Do not make the turn but proceed straight ahead on T-345 for 0.7 mile to its junction with T-510 to the left. Go to the left on T-510 to the creek. Park and walk through the field to the furnace which can be seen a few hundred feet away. The house to the right is the old Joseph Victor house. A lane paved with stone runs parallel with the creek from the road to the furnace.

MOUNT VERNON FURNACE

Isaac Meason built this furnace between 1795 and 1800. The stack is in excellent condition. On the iron lintel above the main opening are the letters "MT VN 1801." If you care to, you can crawl inside and stand erect. Interior walls are quite smooth and glassy from the heat of the blast. The furnace was blown out in 1830.

To reach this furnace follow Pa. 982 to Wooddale and then turn east on L.R. 26050 1.4 miles. Turn left on dirt road T-819 about 0.3 mile. The furnace is in a field to the left.

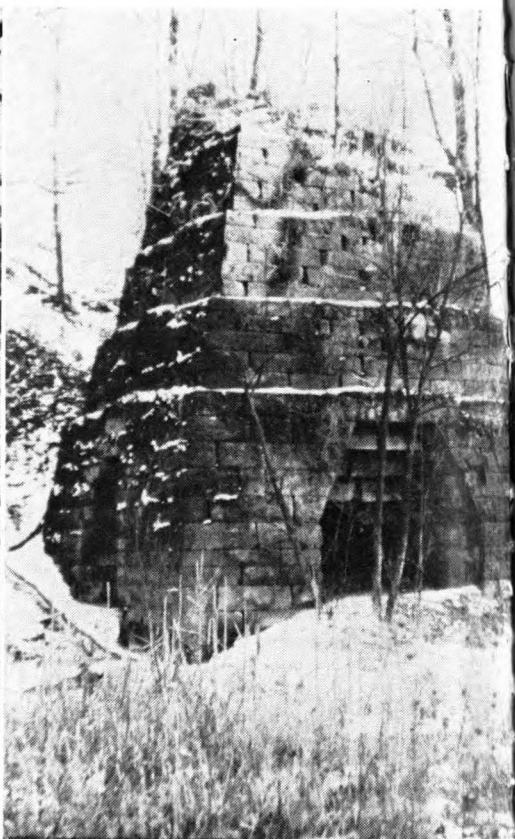
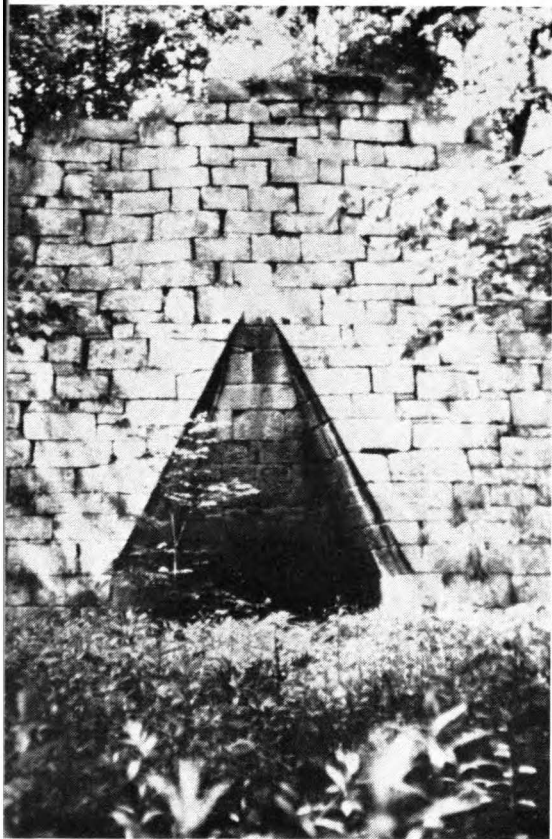
NEW LAUREL FURNACE

Was built in 1812 about $1\frac{1}{4}$ miles downstream from Old Laurel Fur-



Above : Alliance Furnace, Fayette County

Below : Stack of Alliance Furnace, Fayette County



Left: Buena Vista Furnace, Indiana County

Right: Wilroy Furnace, Lawrence County

nace (see *History of Fayette County* by Franklin Ellis). The second Pennsylvania Geological Survey says the plant was built by James Paull and Sons in 1827 or 1828. In 1834 it was sold to David Kaine, who ran it until 1838.

To reach this site follow the directions to Old Laurel Furnace. Starting from where you parked at Old Laurel, continue $\frac{1}{4}$ mile on T-545 to T-792. Follow T-792 to the left about $\frac{3}{4}$ mile to the old Liston School which stands in the forks of the road. Park here and continue on foot along the road to the left of the school. (This road goes into State game lands and cars are not allowed to enter.) About $\frac{1}{4}$ mile on this road, near the foot of the hill, the road splits. New Laurel Furnace is the "Y" of the roads and between the road on the right and the creek. Three sides of the stack are intact. One corner has fallen down. The millrace, tailrace and wheel pit are in fairly good condition. There are many piles of slag in the fields around the furnace. Across the creek and downstream you can trace the old tramroad used to haul the iron to the river.

OLD LAUREL FURNACE

Furnace was built in 1797 on Laurel Run by John Gibson and Samuel Paxson. It later was sold to Reuben Mochabee and Samuel Wurtz, who added Hampton Forge on Indian Creek (then called Salt Lick Creek). The forge was located $\frac{1}{2}$ mile upstream from its junction with the Youghiogheny River.

To reach this location follow L.R. 26047 $4\frac{3}{4}$ miles from the bridge over Dunbar Creek at Dunbar. (This takes you past Union Furnace.) Going uphill the road turns to the right. A dirt road, T-545, continues straight ahead up the hill. Follow this road for one mile to where it crosses Laurel Run. Park here and go downstream along the left bank 250 to 300 feet. The old millrace and waterwheel pit are visible near the creek, and the stack is about 40 or 50 feet back from the creek and against the hill, as was usual in those days. All of the outside stones were removed, probably to build New Laurel Furnace. The circle of the inner lining is discernible at the top. From the furnace piles of slag extend downstream a considerable distance.

PINE GROVE FURNACE (BROWNFIELD FURNACE)

Was built about 1805 on a branch of Mountain Creek in Brownfield Hollow. It was owned in 1857 by Basil Brownfield. Nothing remains of this furnace. About 1960 a man living in the old house on the

property wanted practice with a bulldozer, so he pushed over the furnace and graded the entire area. Not even slag remains. A stone-lined race cuts across the upper end of the clearing near the ancient house.

To reach the scene follow U.S. 40 east from Uniontown to Hopwood. Near the eastern edge of Hopwood turn south on T-626. Follow this about 5 miles to junction with L.R. 26181 at the south edge of Fairchance. Then follow L.R. 26181 south about 2.2 miles to its junction with T-518. Turn left 1 mile to a fork in the road. Bear left at the fork and follow this road (T-518) about $\frac{3}{4}$ of a mile. The furnace site is to the left of the road about 150 feet before crossing the race mentioned above.

REDSTONE FURNACE (HUSTON FURNACE)

Was constructed about 1797 on Lick Run, a branch of Redstone Creek in South Union Township. It was in operation more or less steadily until 1870. Joseph Huston was one of the early owners and was followed by his nephew, Judge John Huston, and afterward by John Snyder. The Huston home still stands across the road from the furnace site, but the land on which the furnace stood was stripped about 1940 and all trace of the operation was destroyed. Slag can be seen on the road and through the field.

To visit the site, go east from Uniontown on U.S. 40 to Hopwood. Turn south on T-626 to L.R. 26043, about $\frac{1}{2}$ mile, veer west on L.R. 26043 about $\frac{1}{2}$ mile. A street comes in from the right; and John Huston's red brick house is on the left, opposite the end of this street. The furnace stood near the creek, in the field to the north of the intersection and back of the houses along the street. A lady who lived in a house farther down L.R. 26043 said her father was raised by Judge Huston and worked around the furnace. She pointed out the location of the plant for us.

ST. JOHN'S FURNACE

This furnace was built between 1810 and 1815 by Jackson and Gibson, below the falls on Indian Creek or Salt Lick Creek, as it was called in those days. It went out of blast in 1828.

To inspect the remains of the furnace start at the junction of Pa. 711 and Pa. 381 in Normalville. Proceed west on Pa. 711 a little more than 0.1 mile and turn left on a dirt road (T-836). Follow this lane downhill. Where the road divides, about $\frac{1}{4}$ mile down the

hill, keep to the left. About $1\frac{1}{2}$ miles from Pa. 711 the road makes a sharp right turn and starts uphill. On the left a lane goes downhill beside the foundation of an old barn. Park here and follow the lane. When it divides keep to the left. (There is an old house in the "Y.") When you come to a clearing, where you will see the foundation of an old house near the lower side, go there and look for an almost overgrown lane going down the hill. Follow this lane to the creek. If you lose the lane, go straight down the hill to the stream. Look for the falls in the creek. The furnace is about 100 feet below the falls, back against the hill. Total walking distance about $\frac{1}{2}$ mile.

Parts of the stack and millrace still are standing. Quantities of slag are between the furnace and the creek.

SPRINGHILL FURNACE

Was built on Rubles Run in Springhill Township in 1794 by Robert and Benjamin Jones. Purchased by the Oliphants in 1833, it was blown out in 1870. The stone from the furnace was used in the railroad tunnel at Outcrop.

The Iron Manufacturers' Guide (1859) says there were four furnaces here:

- No. 1 built in 1794
- No. 2 built in 1805
- No. 3 built in 1830
- No. 4 built in 1854

The original furnace had a 9-foot bosh and was 35 feet high. Its capacity was $2\frac{1}{2}$ tons a day.

To the Oliphants and Springhill Furnace in 1803 belongs the credit for making the first coke iron in the United States. Because of the construction of the furnace and the cheapness of charcoal, the owners did not continue the use of coke until two years later when they rebuilt the furnace.

To reach the indicated site follow U.S. 119 south from Uniontown to Morris Crossroads, about 11 miles south. Turn east on L.R. 26080 3.7 miles to L.R. 26177, then turn south a few hundred feet and cross the bridge over Rubles Run. Go left at the end of the bridge and proceed east along the south bank of the creek. The furnace was on the hillside to the right. A limestone crushing plant now occupies the location. Large amounts of slag cover the field between the hill and the creek.

The large stone house on the hill to the north of the creek was

the ironmaster's house. It still is in use and in excellent condition.

UNION FURNACES (No. 1 and No. 2) (DUNBAR FURNACE)

Union No. 1 was built in 1791 by Isaac Meason on Dunbar Creek, 4 miles south of Connellsville. It was the second furnace built west of the Allegheny Mountains. In 1793 it was replaced by a larger furnace, built downstream from the first site. During ensuing years the stack was rebuilt and enlarged repeatedly. In 1844 the name was changed to Dunbar Furnace. It continued to operate under various labels until 1930, when the depression closed it permanently.

To reach the site of the first Union Furnace, drive east from the bridge over Dunbar Creek in Dunbar on L.R. 26047 0.7 mile. Where L.R. 26047 makes a left bend and a road goes to the right across a bridge, you will see two old log houses (partly covered by asphalt shingle) on the right side of the road. Proceed through the yard of the second house to the creek bank, then upstream about 100 feet. The top of the furnace sticks above ground a few feet and easily can be seen. Glassy stone of the interior lining shows in a part circle. The outside stone of the stack can be seen at the water's edge. To view this, cross the creek on the bridge below the old houses and walk upstream until opposite the furnace.

Union No. 2 Furnace was built across the creek and downstream several hundred feet. One of the country's first by-product plants was established on this site at a later date and, in turn, has been torn down. Because of all of this activity over the years, no trace remains of the second furnace.

WHARTON FURNACE

Wharton Furnace, built in 1839 and operated sporadically until 1873, produced among other things cannon balls for the Union Army during the Civil War. Stack and millrace have survived in good condition. During the summer of 1962 the furnace was repaired and the area cleared for use as a small park. The stack is to be kept as a memorial example to the iron industry which played an important part in the early history of Fayette County.

To reach the site go 1.9 miles south from U.S. 40 on L.R. 26049 about six miles east of Uniontown. This is the second black-top road to the right after passing the Summit Hotel. The furnace is to the right across Cheney Run, visible from the marker relating to it.

ISAAC MEASON HOUSE

Was built in 1802 by Isaac Meason at Mt. Braddock, Pennsylvania. It stands on a hill to the east of U.S. 119 just south of the Connellsville Airport. A marker beside the road near the lane leading to the property explains its history. The house is privately owned and occupied at the present time.

Meason was a prominent ironmaster in the early days of iron-making in western Pennsylvania. He had interest in many furnaces and forges and built Plumsock, the first rolling mill in the western part of the state.

FOREST COUNTY

FOREST FURNACE

When this furnace was built, the part of Forest County concerned was in Venango County ; so its history is in the Venango County chronicles.

A rather small furnace, it was built in 1853, probably the work of William Cross. Judging from what little remains of the plant, it was square in front and round at the back. This is the only furnace in the western counties designed that way. Enough stone survives to tell the shape, and traces of the races and the wheel pit can be seen. There is plenty of slag around the area, showing that the furnace operated for some while.

To visit the place follow U.S. 62 east from Oil City and north through Tionesta. About $3\frac{1}{2}$ miles north of Tionesta you will pass the County Home. Approximately $1\frac{1}{4}$ miles beyond the Home is Little Hickory Creek. Turn right on the blacktop road which parallels the creek, and follow this road $1\frac{1}{2}$ miles to a dirt road to the left. There is a sign at this intersection reading "Camp Nine Trail." Turn left on this road and go about $\frac{1}{2}$ mile. Park when the road becomes difficult and proceed on foot. After about $\frac{1}{4}$ mile the road makes a right turn, then a U-turn to the left and runs downhill. At the bottom of this long and steep declivity the furnace is to the right and across the creek. It actually is between two creeks. The one you cross is Furnace Run, and the other is Little Hickory Creek.

GREENE COUNTY

MARY ANN FURNACE

Greene County had only one furnace, and information about it is very scarce. Swank's *Iron Making in Pennsylvania* says the furnace was

built before 1800, on Ten Mile Creek, by James Robinson. Its location is given as across from Clarksville. The establishment was abandoned before 1820, but the stack was visible for some time after 1840.

J. B. Pearse in *Iron Manufacture in Pennsylvania* says the Mary Ann was built in 1777 or 1784 by Mr. Oliphant, Sr. Mr. Oliphant, Jr., says his father never built a furnace in Greene County. *The Horn Papers*, published by the Greene County Historical Society, reports the furnace as built in 1779 by a Mr. McCullough. James Robinson is listed, in an old atlas of Greene County, as the owner of the land upon which the furnace supposedly was built. Apparently, there was a furnace at this location; and it seems that James Robinson, as the owner of the land, was the most logical man to build it.

To reach the scene follow U.S. 40 east from Washington, about 15 miles to Beallsville. Turn right at the light and follow the markers to Clarksville. Cross the creek, go through the town, cross the creek again. At the second crossing you will see a railroad bridge to the left. As accurately as we can determine, the furnace stood against the hillside directly under the present railroad embankment. Because of the grading and filling for the railroad, all trace of the Mary Ann plant has long since disappeared.

INDIANA COUNTY

BAKER FURNACE (INDIANA IRON WORKS)

Built by Henry Noble in 1837, this plant was bought by Elias Baker in 1848. The new owner tore it down and built a new furnace on the same site. Before the Noble furnace was erected, a bucket factory stood on the site.

To reach the ruins, follow U.S. 22 to Pa. 403 about 1¼ miles east of Armagh. Turn south on Pa. 403 for 2¾ miles. Pa. 403 crosses a bridge over Findleys Run a few yards beyond the junction of Pa. 403 and Pa. 711. On the east side of Pa. 403 just south of the bridge is a house. The furnace remains are in back of this house and at the base of the hill. The foundation of the furnace, several yards of the stone-lined millrace and tailrace, the wheel pit and some retaining walls can be seen. Be sure to get permission before attempting to go through the yard to the furnace.

BLACK LICK FURNACE

This furnace was built by David Stewart between 1844 and 1846. It

was a small furnace, 35 feet high with an 8-foot bosh.

You may view this site by following U.S. 22 to A-4849, which turns north about 3.3 miles east of Armagh. Follow A-4849 for about $2\frac{1}{4}$ miles to a bridge to the left over Blacklick Creek. Cross the bridge and the railroad track at its west end. The road then curves to the right and leads uphill, and the furnace was in the curve of the road. A house now occupies the charging bench. Iron ore still may be seen along the side of the hill. Not even a stone of the old furnace remains in position, but in a yard a few hundred yards from the furnace site are retaining walls that could have been built with stones from the furnace. A man who lived in that part of the county as a boy said he could remember when crossing the bridge that the furnace then was directly in front of him and that the road curved around it, passing almost three full sides.

BUENA VISTA FURNACE

This furnace was built in 1847 on Blacklick Creek by McClelland and Company. It still is in fairly good condition. One side partially has collapsed, but the other three sides are still standing. The plant was built of cut-stone and had one rounded arch and one triangular arch, both surviving. The surrounding land is covered with slag.

To inspect the remains, follow U.S. 22 to Armagh and Pa. 56 north $2\frac{1}{4}$ miles to the north end of the bridge over Blacklick Creek. Turn left and go along the dirt road 200 to 300 feet and park. Walk down over the bank, cross the railroad track and climb the bank on the south side of the track. Look down the slope in front of you and you will see the furnace. It is located at the bottom of the slope and about 200 feet north of the creek. An old blacktop road passes within 75 feet of the furnace and ends at the railroad cut. This was the highway before the present bridge was built.

LOOP FURNACE

Was built in 1847 by Hampton and Smith on the Little Mahoning Creek, 3 miles below Smicksburg.

We were unable to locate anyone in this area who had heard of the Loop Furnace, and though we searched both sides of the creek, we found no ruins. If a furnace was built at this place, all trace of it has vanished. Like the Phoenix Furnace across the line in Armstrong County, it could have been covered with silt dropped by the water backed up by the Mahoning Dam.

LAWRENCE COUNTY

ETNA FURNACE

Was built in 1838 by James D. White. In 1842 steam was substituted for water power. The furnace was located on the west bank of the Shenango River, opposite the end of Bridge Street, in the city of New Castle. It was near the north end of the present railroad bridge over the river at this point.

FREMONT FURNACE (McKINLEY FURNACE)

Constructed by Theodore Powers and A. L. Crawford in 1848 just south of New Wilmington, here was a steam-powered hot blast furnace built to use charcoal. It has been known as the McKinley Furnace because William McKinley, 25th President of the United States, worked at it as a boy. His father had an interest in the business.

To reach this site, drive to New Wilmington in northern Lawrence County on Pa. 18, 208, 158 and 956. Then go south on Pa. 18 from its junction with Pa. 208 about $\frac{1}{2}$ mile. Pass a sanatorium on the right side of the road at the top of the hill (Furnace Hill). Just beyond, the highway bears left. A gravel lane veers to the left, then turns and runs parallel with the highway for 60 to 80 feet, then left away from the road. Proceed to the end of this lane. Get permission from the owner who lives in the house on the property. Go around the garage and follow the old abandoned roadway down the hill and across the creek. The furnace was close to the hillside on the left, about 50 feet from the road and from the creek. The entire area is covered with slag. On the bench above the furnace location you can see piles of charcoal. Along the bank of the creek next to the furnace site are the remains of what appears to have been a retaining wall of cut stone, partly covered with slag and dirt.

HOPE FURNACE

Emory and Culbertson built this furnace about 1845. It was located on a small stream which flows into Slippery Rock Creek a few yards north of the new highway bridge (U.S. 422), and west of the creek. The site of the furnace has been obliterated by extensive quarrying operations. The furnace stood on a hill but the entire hill has been removed. A man who has lived in the village of Rose Point since 1900 says that even 65 years ago no trace of the furnace remained, due to the quarrying operations.

LAWRENCE FURNACE

This furnace was built about 1846 by Emory, Culbertson and Brackenridge. After a few years, they sold it to Kennedy, Campbell and Co. Later the furnace was acquired by Foltz and Jordan, to whom it still belonged in 1877, although it went out of blast in 1875.

The Lawrence plant is one of the most interesting in Western Pennsylvania — from a construction viewpoint. It was built close to the face of a cliff. A well was dug in the bench at the top of the cliff and a hole was cut through to the face of the cliff at its base. The entire device then was lined with firebrick. In this way no bridge from bench to furnace top was necessary. The furnace top was just a hole in the ground!

Visiting the scene, follow Pa. 88 north from Ellwood City to Energy. In the village the road divides, Pa. 88 bearing left and Pa. 388 continuing straight ahead. About 100 feet before reaching this intersection T-395 goes to the right. Follow the last-mentioned road for about $1\frac{1}{4}$ miles. It crosses L.R. 37052, and T-393 comes in from the right. Proceed on T-395 for 0.1 mile. The road then makes a sharp 100° turn downhill. At the foot of the hill, the road crosses a creek. Park here and walk downstream on an old road along the north bank of the creek. Cross the creek at a ford and continue as far as you can without climbing down over a cliff or attempting to go uphill. At this strategic point you will see the stack opening in the ground 10 or 15 feet back from the edge of the cliff. There is a 20-foot waterfall in the creek beside the furnace. It is possible to climb down over the cliff and look into the bottom of the furnace.

Continuing downstream from the furnace takes you into "Hell's Hollow," one of the most beautiful spots in Western Pennsylvania. Eventually you will arrive at Slippery Rock Creek.

MARTHA FURNACE

This cold-blast water-powered charcoal furnace was built by Theodore Powers in the city of New Castle in 1844. Nothing remains of the plant, and so much industrial activity has taken place in the neighborhood that it would be useless to try to find even a piece of slag.

MYRA FURNACE

Emory and Culbertson erected this furnace on Taylor Run in Plain Grove Township about 1853-1855. It was operated successfully by them until 1870, when involvement in other less successful furnaces so

drained their resources that they were forced to close down the Myra.

This furnace was demolished and a private swimming pool now occupies the site. Between the pool and the creek are large quantities of slag. Along the creek bank the slag has a depth of 3 to 4 feet. A man who lives nearby said that when the pool was being built, many of the furnace stones and a large salamander were uncovered. They were used for fill for other areas. This man has a couple of pigs that he dug up at that time.

To visit this site go south on U.S. 19 from Pa. 208 intersection in Leesburg 5½ miles to a blacktop road to the left, L.R. 37054. Follow this 2.5 miles. Turn right into a lane just before reaching a bridge over Taylor Run, and follow this lane about 200 yards to the swimming pool and an adjacent house.

NESHANNOCK FURNACE (POWERS FURNACE)

This furnace was built between 1850 and 1852 by W. G. and C. A. Powers. It was operated for 10 to 12 years.

To reach the place go to Harlansburg on U.S. 19. Just north of where U.S. 19 and Pa. 108 intersect, turn west on Pa. 956. Follow this road 7.6 miles. An old schoolhouse, now a Free Methodist Church, will be on the right. Park here, cross the highway and go down the hill on an old lane toward Neshannock Creek. At the left, at the bottom of the hill, you will see part of the old furnace. The front part was removed when the lane was built. The salamander has been uncovered, also part of the stack above it. Across the road and in a downstream direction, there is a field of slag. Closer to the creek are the remains of a dam and a mill which probably were built after the furnace was abandoned.

SOPHIA FURNACE

Sophia Furnace was built in 1853 by a Mr. McCormick who, the year before, had become the sole proprietor of Peeble and Company, iron manufacturers, in New Castle. In 1863 the business became the Shenango Iron Works; in 1874 the stone stack was remodeled; in 1876 the Shenango Iron Works occupied 20 acres of ground in the Fourth Ward in New Castle and consisted of three blast furnaces plus other facilities.

This primary furnace was located south of Neshannock Creek, about two blocks east of Jefferson Street and just about where Mercer Street would be if it crossed the creek. The area is covered with in-

dustrial developments now. No trace of the old Sophia Furnace exists today.

WAMPUM FURNACE

Porter R. Friend and Company built the furnace at Wampum in 1856. It was sold to Kimberly and Company in 1866 and went out of blast sometime after 1877. A steam-powered hot-blast furnace, using raw coal and coke, nothing now remains of it or the coke ovens nearby.

The site may be reached by taking Pa. 18 to the town of Wampum. As you enter the community from the south, bear right on 482. The road goes under two railroad bridges. The furnace site was to the left and between the two. When the railroads were constructed, the fill for the embankments covered the entire area to a depth of many feet and no trace of the stack remains in view. The coke ovens which were beyond the northernmost track have been replaced by houses and other buildings.

WILROY FURNACE

This furnace was built by Stewart and Foltz about 1854. It was sold to Smith and Collins, who in turn leased it to Martin Wilson. In 1877 it had been out of blast for years. But the stack is one of the best preserved in Western Pennsylvania. It was built of cut stone and has three triangular openings. There are at least three setbacks. It is possible to go into the stack and look up through the bosh. The stone lining is shiny due to the stone melting from the heat.

To reach this location follow U.S. 19 to U.S. 422. Turn west on U.S. 422 and go about 0.9 mile to a blacktop road on the right (T-791). Follow this road around to the old bridge over Slippery Rock Creek. Park at the near end of the bridge. Look downstream and you will see the furnace about 200 feet to the south and against the hillside. It is about halfway between the old highway bridge and the new highway bridge over the creek.

MERCER COUNTY

BIG BEND FURNACE

John King and James McFarland built this furnace in 1846. It was abandoned after only a few years operation.

In quest of the site follow Pa. 258 northwest from the square in Mercer $5\frac{3}{4}$ miles to a road, T-584, to the right. Follow T-584 $\frac{3}{4}$ mile

to its end on L.R. 43082. Turn left on the road stipulated about 100 feet. You then can see a pile of rubble, all that remains of the furnace, about 50 or 60 feet to the right, next to the hill. Slag covers the surrounding fields.

BLANCHE FURNACE (SHARPSVILLE FURNACE)

This furnace was built in 1846 and rebuilt in 1870 to use coke and imported ore. It was replaced in 1882 with a modern type stack and accessories. Joseph and John McClure and Vincent and Himrod were the builders. Nothing now remains of the structure. Subsequent building has erased all traces of it.

To reach the site go to Sharpsville and follow High Street east. About 700 feet after passing Prospect Street on the right a street goes to the left. The old stack stood about 300 feet west of this street and about 125 feet from the old canal.

CLAY FURNACE

Vincent and Himrod built the Clay Furnace in 1845. It was a charcoal plant at first, but short supply of charcoal caused a change to coke. However, coke from local coal was disappointing, so splint coal was used. This was the first time raw coal successfully was used in a blast furnace. In 1853 Lake Superior ore was used in the Clay Furnace and in the Sharpsville Furnace, and that was the beginning of the end for charcoal furnaces and local ore.

To reach the Clay site drive west from Mercer on U.S. 62 for 8 miles to an historical marker on the right side of the road. Turn north on T-496 and proceed 2.2 miles. The furnace ruins are against the hillside in a pasture on the right. A road (T-547) starts opposite the furnace and goes west. Rubble and pieces of lining are to be seen. There is some slag around, too.

ESTHER FURNACE (HOPE FURNACE)

Was built in 1846 by Power, Waugh and Reed. No trace of the stack remains, but slag is visible across the Shenango River in the "Y" formed by the junction of the Shenango and Little Shenango. This slag was from the Esther as well as from the Greenville Furnace which was close by.

Searching for the site of the former plant go to Greenville and follow Pa. 358 west across the river. At the west end of the bridge, turn north. Just above the dam in the river and opposite the point be-

tween the two rivers a ravine runs back from the river. The furnace was at the far end of the ravine. No trace remains today.

GREENVILLE FURNACE

Himrod and Woodworth sponsored this furnace in 1846. It went out of blast in 1851. No trace remains except the slag dump mentioned in connection with the Esther Furnace.

This furnace set in a ravine about 400 feet north of the Esther Furnace.

HAMBURG FURNACE

Was built by Mills and Lowry near New Hamburg in 1846. To reach this furnace site follow Pa. 58 north for $7\frac{1}{2}$ miles from Mercer Square to L.R. 43096. Turn left and proceed to New Hamburg village, about $2\frac{1}{4}$ miles. Turn right, then left, then left again on L.R. 43036. Follow the latter road across the river and turn left at the end of the bridge on T-554. Go south for about $\frac{1}{4}$ mile. Cross the bridge over the small stream. You will see a house on the right. This house stands on the site of the Hamburg Furnace. Part of the foundation of the house originally was part of the foundation of the furnace. A few years ago a water line was put in across the bench directly in back of the house. The digging involved going through several feet of ore at one place and through charcoal at another. A roadway of slag extends from the river bank to the canal, about 100 yards to the east.

HARRY OF THE WEST FURNACE (TEMPERANCE FURNACE)

J. G. Butler and William McKinley, father of the President, built this furnace in 1838. They sold it in 1845; and it was sold at sheriff's sale in 1855 and never operated again. Called Temperance Furnace at first in compliment to Butler's wife, it was changed to Harry of the West in tribute to Henry Clay as a promoter of high tariffs and therefore a friend of ironmasters.

In 1942, a two-ton block of cast iron, either a salamander or the results of a break out, was dug out of the slag pile and sold for scrap iron.

To reach this site, go east from Greenville on Alternate U.S. 322. At the edge of town go through an underpass of the Bessemer Railroad. At $5\frac{1}{4}$ miles east of this underpass, turn south on T-640. After $1\frac{1}{2}$ miles this road ends at another road, T-765. Turn left and go about $\frac{1}{4}$ mile to intersection with T-664 to the right. This was known

in the early days as Furnace Corners. Turn right on T-664. About 200 feet down this road you will see the remains of the furnace in a field to the right — only rubble and slag.

IRON CITY FURNACE

This furnace was built by W. W. Wallace of Pittsburgh in 1846 or perhaps 1838. It was powered by steam and was a cold-blast charcoal furnace. It was out of blast by 1865, owned by Wallace and Todd at that time.

The scene may be visited by going west and south from Mercer on Pa. 468 $2\frac{1}{2}$ miles. Park near a farmhouse on the north side of the road. Walk north on the west side of the creek about 100 yards, then turn west uphill. About 150 yards ahead you will find the ruins of the furnace. Not much remains, but there is enough to judge its size. Two or three courses of stone can be seen on one side and part of another side.

MAZEPPA FURNACE

Erected by Garrett, McGaw and Company about 1852, Mazeppa went out of blast in 1859. Ore was dug from open pits nearby. During the First World War ore again was mined here and shipped to Pittsburgh furnaces.

To reach the site drive east from Mercer on Pa. 58 $2\frac{1}{2}$ miles. Turn right on dirt road T-431 about $\frac{1}{2}$ mile. Where the road veers slightly right, stop. Go through a gate on the left. Walk straight ahead through the field to the creek. The furnace was on the far bank of the creek and close to the hill. You easily can discover the site by reason of the difference in the vegetation on the location of the stack. No stones remain. Considerable slag covers the field.

MINERAL RIDGE FURNACE

Not much could be learned about this furnace except that it was on a farm owned by John Quinn, and one of Quinn's daughters married a Wallace. This may or may not be the same Wallace who built Iron City Furnace. Searching for this plant, go west from U.S. 19 on Alternate U.S. 322 about $1\frac{1}{4}$ miles. Turn left again on L.R. 43048. After about 200 yards there is a farmhouse on the right. Go through the farmyard to the barn. In back of the barn the ground drops off to a flat area by the creek. The furnace stood at the foot of the slope. Only piles of stone and slag remain.

OREGON FURNACE

Built in 1845 by Alexander Hutchinson and Company, it made little or no iron after 1847. A steam cold-blast charcoal furnace, it was owned for a while by W. W. Wallace of the Iron City Furnace. At the time it was blown out it was owned by Lyons, Mix and Company.

The site may be visited by going west from the square in Mercer on U.S. 62 for 2.2 miles. At the west end of the bridge over Lackawannock Creek, turn sharply left. About 0.1 mile ahead you will see a swampy spot on the right side of the road. Beyond this small swamp was the furnace location. It is in heavy undergrowth and rather difficult to find although only 20 or 30 feet from the road. Nothing remains of the plant but a depression in the ground, a few stones and some slag.

REED FURNACE (ANNADALE FURNACE)

Built in 1843 by Charles M. Reed of Erie, this furnace was out of blast before 1849. The furnace probably was also known as Sandy Furnace.

To reach the site drive to Raymilton in Venango County. Just south of the railroad crossing, turn west on T-395. Follow this road into Mercer County, where it becomes T-649. When it terminates in another road, T-946, turn right and cross the bridge. Park here and walk west, parallel to the creek and old millrace. Stay north of the millrace. At the dam go right to the bank and locate the old building foundation. Just west of the foundation is a depression in the ground. This, we believe, is the site of the furnace. There has been so much building activity in this area since the plant was shut down that it is difficult to determine the location of the furnace. What decided us was the terrain at this spot and the fact that it was the only place where we found charcoal slag. An alternate route is to follow U.S. 62 east from Sandy Lake for $3\frac{1}{2}$ miles to T-946. Turn south on this road for one mile to the bottom of the hill and the bridge, then proceed as before.

SHARON FURNACE

Was built in 1846 by Shoenberger, Agnew and Company. Dr. Shoenberger was the sole owner in 1852, and after his death the furnace became the property of Boyce, Rawl and Company. In 1882 the furnace was rebuilt and adapted to the use of coke. It was operating in 1889 and shut down some time later.

To reach this site, drive north on Pa. 518; $1\frac{1}{4}$ miles from the intersection of Pa. 518 and U.S. 62 the road turns east. About $\frac{1}{4}$ mile farther on, the road turns north again. About $\frac{1}{4}$ mile past this turn

you will see a limestone plant on the right. The furnace stood about the center of the company's yard. Nothing remains to show that a furnace at one time operated at this place.

SPRINGFIELD FURNACE (SETH AND HILL FURNACE)

Was built in 1837 or earlier by Seth and Hill. It was managed by a Mr. Sennett for some time. William S. Schollard took over as manager in 1846. The furnace went out of blast in 1862.

Mr. Schollard was unorthodox in his methods of running a furnace. One idea of his that seems to have worked was to use dry wood in place of charcoal or at least to replace part of the charcoal in the burden. This procedure was continued at intervals for several years due to a shortage of charcoal in the area. This shortage was one of the reasons for the abandonment of the furnace.

An unusual feature of Springfield Furnace was its 38-foot-diameter water wheel. This was much larger than most wheels and was possible because of the location of the furnace at the foot of Springfield Falls.

To visit this furnace proceed north on U.S. 19 through Leesburg to its intersection with L.R. 43012 at the northern edge of town. Turn right on this road and go about 100 yards to where the hard road bears right. Do not go right but continue straight ahead on a dirt road, T-335. About 150 feet from the hard road this dirt road crosses Wolf Creek. Springfield Falls is to the left and only a few yards distant. Park and walk down to the top of the falls. Look down over the falls and you will see the outline of the furnace, partly in the stream and near the left bank. Part of the wheel pit or race can be seen. Large square cut stones lie in the creek just below the falls. Some slag can be found along the left bank below the furnace.

WEST MIDDLESEX FURNACE

Built in 1845 by Sennett, Clark and Company, and operated intermittently until about 1875 when it was torn down, here was a steam-powered hot-blast furnace using raw coal instead of charcoal or coke.

The site may be reached from West Middlesex, which is at the intersection of Pa. 18 and Pa. 318 in southwest Mercer County. Drive west on Pa. 318 and cross the bridge over the river. Turn sharply left at the first intersection and go back to the river at the foot of the bridge. Turn right along the river road. The furnace site is in the first ravine running back into the hill. A house stands at the low end

of the ravine. Nothing remains of this establishment except slag.

SOMERSET COUNTY

JACKSON FURNACE

Was built about 1825 on Picking's Run by Irwin Horrell, Phillip Murphy and Charles Ogle. It was unsuccessful in their hands, and about 1833 Joseph and William Graham took over and put the plant in blast but were overtaken by speedy disaster. The furnace then was abandoned.

What remains is in bad condition. The millrace and wheel pit easily are traced, and there is much slag around. The personnel of Camp Sequanota, who now own the land upon which the furnace was built, have taken an interest in the place and welcome groups to see it and hear about its history.

To reach the site go west on U.S. 30 from its junction with U.S. 219 in Jennerstown for 1.1 miles. Bear right on L.R. 55092. Follow this road 1.2 miles and turn left on a dirt road leading into Camp Sequanota, a Lutheran Church camp. Follow this private road to where it crosses the creek. Park at the bridge and walk upstream along the north bank of the creek (Picking's Run). About 100 to 150 yards up the stream you will see the ruins of the furnace to the right next to the hill. A well-defined tailrace leads from the furnace to the run and a sign is beside it. As the furnace is on private property, permission should be obtained before entering upon the area.

ROCKINGHAM FURNACE

This cold-blast charcoal furnace was built in 1844 by John Foust. It was later run by Custer and Little. It was a small furnace with a 6-foot bosh and 21-foot stack. (Another source says that the furnace was built in 1841 by William Oldham.)

To view the location, drive to Reels Corners on U.S. 30 in the eastern part of Somerset County, and turn north on Pa. 160 through Central City. At 6.6 miles, you will see an enormous slate dump on the left. There is an old building, also, to the left, serving as Rockingham Post Office. Nearby you will see a coal tippie which occupies the site of the Rockingham Furnace, but there is so much slate and coal around that it is infeasible to find any trace of the furnace.

SHADE FURNACE

Shade Furnace, the first iron furnace in Somerset County, was built in

1807 or 1808 by Gerehart and Reynolds. It was operated by various owners until 1858, when it was blown out finally.

To get to this site follow U.S. 30 to Reels Corners and turn north on Pa. 160 and go 3.6 miles to L.R. 55110 to the left. Follow this road 0.9 mile to L.R. 55085 which continues straight ahead. Follow this road for $2\frac{1}{2}$ miles to dirt road T-717 to the right. After $\frac{1}{4}$ mile T-717 becomes T-719. Continue on this road 0.8 mile to its junction with a road coming in from the right which is also T-719. Park here and walk down the old lane which leads straight ahead. Follow the telephone poles to the railroad tracks. The lane is so badly overgrown that the poles are the easiest signs to follow. At the railroad walk to the right to a little creek which runs under the tracks. Cross the creek and go downhill beside it to Shade Creek, where you will see the remains of a race. Follow this race upstream a few hundred feet to the furnace ruin which now is only a pile of rubble. You can see the millrace and wheel pit and the end of a dam on Shade Creek. Nearby in the woods are remains of old building foundations. There is enough slag around to show that at one time this was a very busy place.

SOMERSET FURNACE

Was built by Huber, Linton and Myers in 1846. It was later owned by G. Ross Forward; and the area around the furnace was for many years known as Forwardstown. It was a fairly large furnace, having an $8\frac{1}{2}$ -foot bosh and a 32-foot stack.

To visit this ruin go north on U.S. 219 from Jennerstown or south from Johnstown to L.R. 55025 to the west, 4.5 miles north of Jennerstown. About 100 feet south of the intersection is a farmhouse. Go through the yard to the back of the barn where you will see an old log cabin which was the office for the furnace when it was operating. Beyond the cabin are the remains of the furnace. It now is only a pile of stones and dirt. Go past the furnace and you will see the millrace. There is considerable slag scattered about.

WELLERSBURG FURNACE

This furnace was built in 1856 by the Union Coal and Iron Company under the management of G. Ross Forward. It was blown out in 1866.

The outside stone has been removed from the structure, leaving only the brick interior. The top of this brickwork was eliminated and a roof put over it. A door was cut into the side, and the plant now is a chicken coop. Enough foundations, arches, etc., remain to prove that

here was a well-built furnace. The wheel on the blast engine had a 15-foot diameter. Ore was mined about 4 miles away and brought to the furnace in cars riding on wooden rails.

To reach this scene, go south on Pa. 160 to Wellersburg. While descending the hill in Wellersburg, turn sharply right on a dirt road which cuts back just below a white church. Do not turn into the road which makes a 90° angle but drive into the one which makes a 45° angle with Pa. 160. Go down this road about 200 yards to where it makes a left turn and park. The stack is almost straight ahead in a farmyard. Slag that covers the field is coke slag. This was a coke furnace, at least in its last years. There are many foundations in the area. After the furnace was shut down there was a large coal tipple there for many years.

[To be concluded]