

HISTORIC MINERAL FEATURE

A Brief History of the Copper Mine at Bare Hills, Maryland

by
Herbert C. Moore

Introduction

In similar fashion to a number of other eastern U.S. mineral locations, the Bare Hills Copper Mine has been obliterated by urban development. Herbert Moore, a historian and naturalist who was active with the Natural History Society of Maryland, visited and studied the mine during 1934 and 1935. Moore gathered all available historical information and interviewed the last living miners. His efforts were preserved in an article prepared for the Society and published in May 1935. At the time of Moore's visit, a water-filled shaft and a number of buildings and building foundations were still accessible. Mineral specimens, both copper-bearing and non-copper species were still collectable. By the time Pearre and Heyl visited the site during the preparation and mapping of their report* in 1957 circumstances had changed. The main shaft had been filled and the dumps were being leveled for a suburban housing development. No copper mineralization could be found in the area.

The Bare Hills Copper Mine is a classic Maryland location, with specimen representation in many institutional and private collections. The article is being presented here for the interest and enjoyment of our readers. We thank the Natural History Society of Maryland for permission to republish this story.

Copper at Bare Hills

The Bare Hills are now located less than a mile from Baltimore City, near

the suburban section known as Mt. Washington. That portion of the Hills where the chrome mining operations were carried on is near Falls Road, while the copper mine is on Smith Avenue. Old Pimlico Road connects Falls Road and Smith Avenue. As Baltimore City increased in size, Bare Hills, quite naturally, became closer. In the 1860's the Hills were seven miles from the city.

Copper was discovered at Bare Hills in the days when Smith Avenue was a mere dust road. The earliest reference appears to be a Maryland law case dated 1848, deciding a dispute which had its beginning in 1844 and 1845.

*"The fact that the company
exchanged stock for provisions at
the general store
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financial condition"*

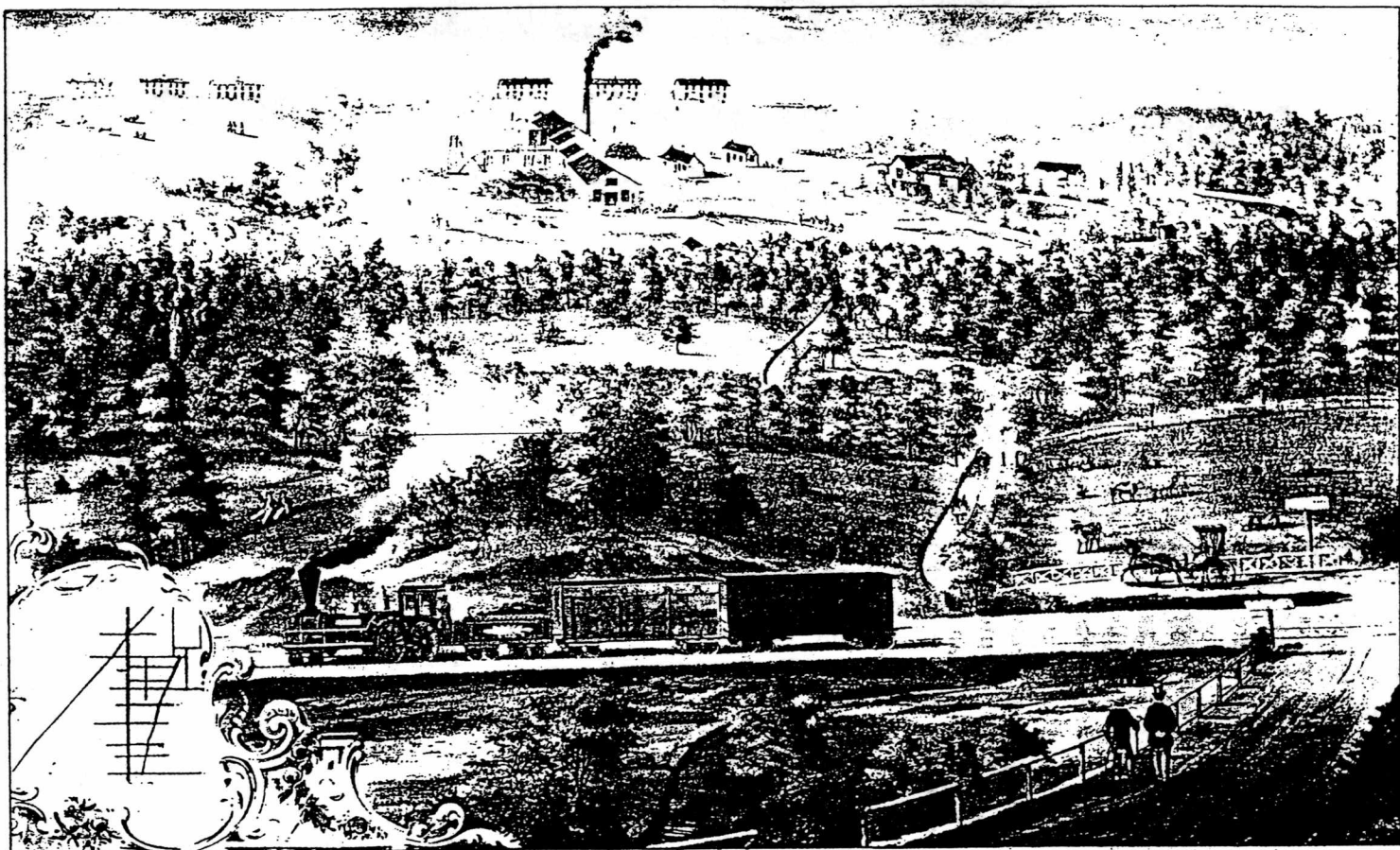
Sometime prior to 1844, copper had been discovered on the farm of Thomas B. Watts, who desired that the deposits should be explored and worked. (In reality, he was the reversioner, with his mother possessing a life interest in the land.) Having little money, and knowing nothing about mining, he entered into an agreement with Thomas Petherick, a mining engineer of some repute, for the exploration of the copper on the farm. In the agreement Watts received one dollar consideration and a promise of a full fifteenth part of all the minerals after the same had been rendered fit for smelting, clear of all expenses. Petherick paid Watts \$30.00 "to make an excavation to the shaft sunk on the copper ore on the

farm." Apparently a small shaft had already been made.

In December, 1844, Petherick transferred his interest to Isaac Tyson, Jr. This gentleman attempted to hold Watts to his agreement, but Watts, perhaps advised that he had made an unequal contract, treated it as null. Tyson brought suit for specific performance. The case was argued by three notable lawyers of the time: Reverdy Johnson and J.H.B. Latrobe for Tyson, and T. Parkin Scott for Watts. The Court decided that the agreement was one-sided. Petherick (or his assignee, Tyson) could, under the agreement, use the mine if it were found productive. If found otherwise however, he could just lag along, doing nothing, and all the time depriving Watts of revenue which he might be able to get from somebody else who knew better how to work it; or by using the property for other purposes. Therefore, the contract was not mutual.

Subsequently it seems, from an isolated allusion in Scharf, the great Maryland historian, that Tyson did dally with the mine. Others also endeavored to mine the copper there. However, the operations between 1845 and 1855 were carried on none too successfully, although the shaft was dug to a depth of 350 feet. The drainage of water, always a great question at the Bare Hills Copper Mine, and the hoisting of the ore and waste were handled by means of a small 4-horse-power steam engine. The water was drawn up in buckets through a small irregular shaft which struck the vein at the depth of 140 feet. Below that point another small opening was made on the dip of the vein about 180 feet. In 1855, Dr.

*Heyl, Allen V. and Pearre, Nancy C. "Copper, Zinc, Lead, Iron, Cobalt, and Barite Deposits in the Piedmont Upland of Maryland" 1965, MD Geological Survey, Bulletin 28.



View of the Bare Hills Copper Mine, drawn and printed in color by Schmidt and Trowe, Baltimore engravers, circa 1870. Location at point where Northern Central Railroad crosses Falls Road. (Photo courtesy of the Maryland Historical Society.)

William H. Keener acquired a small interest in the mine, and in 1858, he purchased a controlling interest. Captain Edward Powers, his superintendent, abandoned the combined use of shaft and slope, widened the slope, and extended it to the surface.

In 1860 the Bare Hills Copper Mining Company was incorporated by an Act of the General Assembly of Maryland. Later, in 1864, the company was reorganized with Keener as president, and work commenced on a greater scale. Up to 1864 the shaft, which was not vertical but on an incline of 45 degrees, had been dug to a depth of 590 feet. The new system of pumping and hoisting was effected by a steam engine cylinder with two boilers, 25 feet long and 3½ feet in diameter. An ore crusher was attached to the engine with a pair of rollers 18 inches in diameter and 14 inches in length, and three jigger machines of the oblong type were used, for sifting. Other very important im-

provements were made, such as a suitable dressing house for the ore (84 × 45 feet), an office, smith's shop, carpenter's shop, magazine, dwelling for the captain, and four blocks of miners' houses, each measuring 50 feet.

In 1864 the mining company had a capital stock of \$500,000 in 100,000 shares of \$5.00 each. All stock was apparently sold at the time or within a short period, for two dividends on the total capital stock were declared before 1866. The working capital however, was not absorbed at the outset as was so often done. Furthermore, \$25,000 was loaned on good security. Before 1864, Keener had explored the levels and exposed easy access to enough ore, so it was not necessary to spend a great deal in sinking the shaft.

During the first two months of the new company's operations, over 175 tons of ore were mined. Only 12 miners were working at the time.

From March, 1864 to March, 1865, 700 tons were taken from the mine, and the shaft was dug 50 feet deeper to the 650 foot level. During the month of May in 1864, 80 tons of ore were brought to the surface by 25 miners, and in June, 1864, 40 men were employed at the mines. Thereafter, until 1867, the average was 25 men, 9 for exploration and 16 to work the ore.

A resumé of the period 1863 to 1865 shows: in 1863—432 tons producing 2,352 lbs. of copper were mined with a value of \$21,558; in 1864,—700 tons, valued about \$54,300; in 1865 about 75 tons a month. In June, 1864, a dividend was declared of 2½ percent—\$12,500., on the capital stock of \$500,000., and in December, another of 4 percent, or \$20,000.

Weed in "Copper Deposits of the United States" writes that Dr. Lehmann, once chemist at the Baltimore Copper Works, reported yearly shipments prior to 1864, as varying

between 2000–2500 tons of 15–20 percent ore. Inasmuch as the records of the Baltimore Copper Works were destroyed by fire and his figures are mostly from memory they are probably not as accurate as the ones given by the copper mining company.

The records between 1865 and 1868 seem not to exist. In July of this latter year, a great cloudburst, mentioned by Scharf and other Maryland historians as the worst one ever experienced in Baltimore flooded much of the section around Jones Falls and the Patapsco River. It washed away half a dozen bridges, including the bridge at Mt. Washington, and broke the dam which stored the water that was pumped out of the

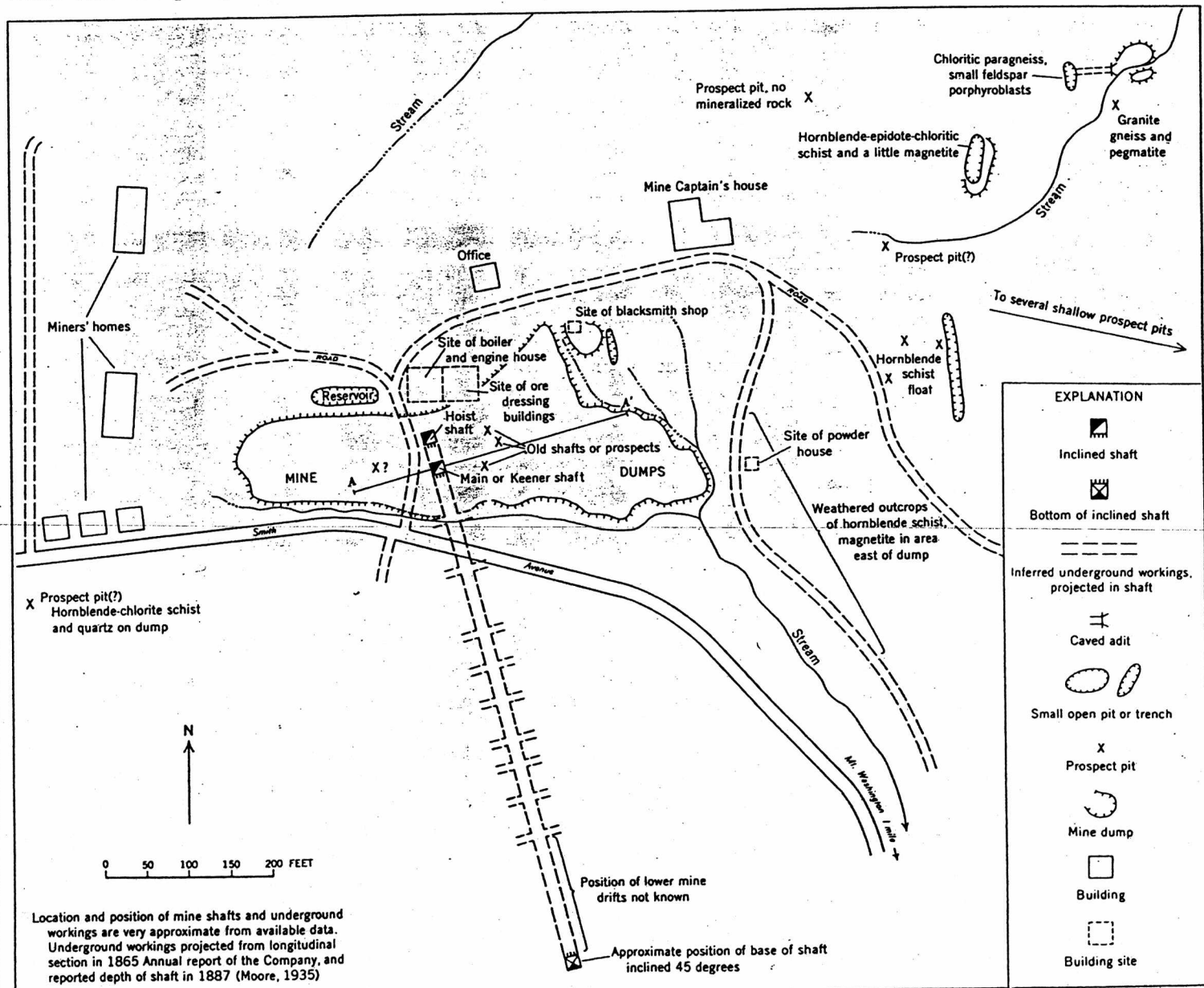
mine. This reservoir, used for dressing the ore, flooded the mine and stopped work for some time. (This flood is described vividly in the American and Commercial Advertiser of July 24, 1868. Several people were drowned in Baltimore City, while at Ellicott City over 30 persons lost their lives.)

The water was pumped out, and the mines functioned intermittently from 1867 to 1887. The shaft during this period reached 900 feet in depth, inclining under Smith Avenue. For the ten year period of 1866–1877, the annual output averaged from 800 to 1,200 tons of "cobbed ore", averaging 18 per cent copper. This represented 1000 to 1500 tons of "hatched" ore

or concentrates. From 1866 to 1887 the shipments gradually lessened, averaging about 50 tons a month of 18 percent "cobbed ore." At that time copper was worth about 15¢ a pound. (\$54.00 per ton). The gross valuation from 1864 to 1887 was then about \$1,750,000. for 32,500 tons of 18 percent material.

In 1880, according to the Tenth Census report, the mine yielded 17 tons of concentrates, from which 1,275 pounds of copper were produced. The mine was undoubtedly 'dying' in the 80's. In the same year the Mineral Hill Mine near Finksburg, Maryland, yielded 164,640 pounds of copper—quite a difference.

In the late 1890's the mine was op-



Map of the Bare Hills Copper Mine from 1957 projection made by Heyl and Pearre.

erated again. A number of Mt. Washington residents became stockholders in an unsuccessful company. Very little was done—in all, six carloads of ore went to a New Jersey smelting company. The fact that the company exchanged stock for provisions at the general store, as well as for the services of a mason who erected foundations, indicated that it was in a weak financial condition. According to the stockholders and one former director who were interviewed “there were some honest officers of the company and some dishonest ones.” In any event, the stockholders lost their money.

During this last venture, new machinery, an air compressor, and other equipment were set up. One nearby resident states that after all the money was gone, coal, which kept the steam engine going, could no longer be purchased; the mine filled up with water again and has remained so. After this last disastrous enterprise the property was mortgaged and sold. It came into the hands of the present owner who is a resident of Washington, D.C.

Another phase of history is presented by men who were workers in or above the mine many years ago. In this connection, credit should be given Mr. J. Doheny, who worked in the mines as a boy in 1866 and 1867 and Mr. Joseph Burns, who now lives where the old copper house near the siding at Bare Hills' Station once existed. He formerly lived in the old miners' houses not far from the mines. Also Mr. George Gambrill, who worked above the copper mine as a boy, and who later performed the masonry work referred to earlier and Mr. J. Starr, who worked there in the 80's.

The period of greatest prosperity was apparently in the 1860's. In those days, however, wages were not high. The miners received about \$1.50 a day, the surface men \$1.25, and the boys—50¢. The surface men and boys worked a day shift of ten hours. The miners worked in three shifts of eight hours each, and since it was always 'night' in the mine, it mattered not at all. The miners used

Minerals of the Bare Hills Copper Mine

by Charles W. Ostrander

Many interesting minerals have been found at the well-known Bare Hills Copper Mine, located on Smith Avenue about one mile east of Old Pimlico Road. This mine was in operation, somewhat intermittently, from the middle of the last century up to the early 1900's.

The ore-bearing rock is metagabbro (hornblende gneiss), bordering on the serpentine rock of Bare Hills. Little remains to show that the mine once existed except the extensive dumps now badly weathered, the water-filled shafts, and foundations of the old engine house.

Of the ore minerals collected at this location the most important is **CHALCOPYRITE**, which occurs in brassy yellow masses, the specimens now found in the surface dump being badly weathered. As yet we have found no crystals of this mineral at the mine. **BORNITE** is found in a massive state often associated with the Chalcopyrite. It is easily recognized by the iridescent coating on the surface of the mineral from which the name “peacock ore” originated.

Sometimes one sees a soluble coating of a bluish-green mineral surrounding the Chalcopyrite. This is **CHALCANTHITE**, a product of the oxidation of the former minerals. **AZURITE**, another mineral formed by the oxidation of copper, is found but rarely. It occurs as a blue stain on rock. **MALACHITE**, which is easily recognizable by its dull green color, is also found staining the rocks. It can be commonly seen on the rocks in the small stream which runs through the mine dumps. It was in solution and was deposited on the rocks.

MAGNETITE occurs in heavy black crystalline masses and in small octahedral crystals. This mineral is easily identified by its magnetic properties. **LIMONITE** is found as a rusty brown coating on the ores of which it is an oxidation product.

Two minerals of the Amphibole group seem to be the most prevalent material on the dump, the reason for this being that they comprised the greater part of the waste material from the mine. The most common of this group is **ACTINOLITE** which is found in greenish to brown lamellar masses.* Much similar to this is **TREMOLITE** which occurs in the same form but has a lighter brown color.

PLAGIOCLASE (Na, Ca feldspar) is found in small white crystals, usually being associated with **HORNBLende**. In small radiating pistachio-colored crystals in Feldspar and Calcite is found **EPIDOTE**. Small crystals of black **TOURMALINE** are also found on the dump. **CHLORITE** is found as a decomposition product of the silicates. Garnet (**ALMANDITE**) occurs in minute red crystals in the feldspar. **STILBITE** occurs rarely as a drusy lining of rock cavities.

*The mineral in question has been observed in other collections under the labels of Cummingtonite or Bronzite-Estatite, but optical analysis has shown it to be Actinolite. So far no trace of the other two minerals mentioned above has been found.

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candles, either stuck in clay on their stiff hats, or placed on a nearby rock.

The ore was mined by using a hammer and black blasting powder. Later the air drill came into use; air was pumped down a pipe to the apparatus. Dynamite was not used in the earlier days. Instead they used blasting powder with a fuse, which was put in a hole. If the hole was wet, they made a paper cartridge. The rock foundation of the old powder house is still where the house itself once

stood, a hundred yards or so from the mine.

A wooden cart with an iron frame was pulled up a three-foot-gauge track by a cable on a drum that was run by the engine. It took four to five minutes for a load to reach the top, because the cable moved slowly on the drum. After the ore arrived at the surface, the solid pieces of copper were removed. The “dead” or dregs were thrown away, the remainder crushed, and then it was given to the boys to sift. Next, the copper concen-

trates were put in a trough and washed by water that was pumped up from the mine and stored in a surface reservoir.

The ore, in the earlier period, was taken by horse and wagon through a natural cut in the hills to Bare Hills Station, where a copper house and a siding were located on the Northern Central Railroad (formerly the Baltimore and Susquehanna). Old residents do not recollect the copper house and siding as being there in the 70's so this route through the hills was probably abandoned in the 60's. The siding was about a mile from the mine. A hundred yards from where it once stood, specimens of copper were found by Mr. Burns and the writer. The ore that was sent to the copper house near the siding was transported to Canton. At a later date the ore was taken down Smith Avenue to the Mt. Washington Station, instead of by the old route.

Most of the miners lived around Bare Hills. Six or seven of the old miners' houses were still in existence and occupied a few years ago, and the old mining company office is now used as a dwelling. As for amusements, old miners declared with a sigh, that whiskey was one of the very few.

No laws had been passed in the third quarter of the last century regarding child labor. Two of the men from whom information was obtained worked as boys, dressing the ore on the surface of the mines. Mr. Doheny, who was eleven years of age when he worked at the mine, said that there were at least 10 other boys between the ages of 12 and 18 working there at the same time. He was the youngest. Most of the boys had stopped school in the fifth or sixth grades. He says that boys were fired daily, by old Captain Cooper for various pranks and then, as they started to leave, were called back. The captain, he added, was superstitious about whistling in or near the mines, believing accidents would follow. Fortunately, there does not seem to be a record of any.

Practically all of the miners were Irish. (Every person interviewed was

very emphatic about this point). This was especially true in the early period of the mine's history. So far as can be ascertained, no slaves were used in working the mine before the Civil War. Certainly not in Tyson's time, for he was a strict advocate of abolitionism. Old residents do not remember ever seeing free Negroes thereabouts.

The ruins of the old engine house, the foundation where the air compressor rested, the foundations of the old powder house, the old reservoir (about 75 feet × 20 feet) where the water was stored, a water-filled shaft, the old office, the captain's house, a few houses in which the miners lived, and the mine dumps are about all that is left on the surface to show what once was a busy mine.

References

1. First and Second reports of P.T. Tyson, State Agricultural Chemist, to Maryland House of Delegates, January 1860-1862.
2. Maryland Law Reporter—7 Gill, p. 124, 1848.
3. Overbeck, Robert W., "The Copper Ores of Maryland." J.H.U. Dissertation, 1915.
4. Weed, Walter Harvey "Copper Deposits of the Appalachian States" 1911 U.S.G.S. Bulletin 455.
5. Keyser, R.B. "Maryland, Its Resources, Industries and Beginnings" 1893 Prepared for the Board of the World's Fair, Chicago pgs. 112, 114 and 120.
6. Exposition of the Baltimore and Cuba Smelting and Mining Company, 1845. (Contemporary references to copper and prices).
7. Howard, G.W. "The Monumental City" 1873, Baltimore p. 225; advertisements.
8. Scharf, J.T. "History of Baltimore City and County" 1881 pgs. 343, 422, 772, 773.
9. Report of the Bare Hills Mining Company 1864.
10. Prospectus of the Bare Hills Mining Company 1864.
11. The Annual Report of the Bare Hills Mining Company, 1865.
12. Report of the Guilford Mining Company (N.C.) May 1860. (Contemporary copper prices).
13. Oreknob Prospectus 1873 (Contemporary information relative to copper.).
14. The Maryland Copper Company of Carroll and Baltimore Co., 1860.
15. Tenth U.S. Census, Vol. 15 pgs. 798, 977, 978.
16. Clark, William B. and Mathews, E.B. "Maryland Mining Industries" 1908 MD Geological Survey.
17. Prospectus of the Mineral Hill Mine, Carroll Co., MD, 1860 (Valuable contemporary reference.).
18. Prospectus of the Springfield Copper Mine, Carroll Co., MD, 1853.

LETTERS TO THE EDITOR:

Bridgewater Titanites

While browsing through a little-used old book in my library, I came across the original owner's signature on the title page in the old-fashioned way. What are the odds, I wonder, of finding Dr. Forwood's signature in my tiny library concurrent with researching his titanite discovery? He continues to reach me over the years!

Carter Rich
Aldie, VA

W N Forwood

Carter Rich's excellent article on the Bridgewater titanites brought back interesting memories on my having acquired one of the specimens Carter illustrated (figure 3, left crystal) momentarily as mineralogist for Ward's Natural Science Establishment. About 1985, Larry Conklin of New York City was an exhibitor at the Rochester Mineralogical Symposium, as was Ward's. Each of our cases contained objects of interest to customers we had: Larry's Bridgewater specimen and Ward's large polished Brenham, Kansas pallasite meteorite slab. The exchange was made as part of a package of other specimens and the mentioned specimens went to the "customers" attending the show. The titanite was exchanged with Steve Chamberlain for various educational minerals. I understand that Steve resisted numerous offers from a variety of interested collectors until a few years ago and it could only be wrested from his collection when his collecting objectives turned to be more firmly focused on New York State specimens. Although specimens can be long "dormant" in collections, they do sometimes flare into life and these minute moments are as interesting, to some, as the details of the original specimens' discovery.

Vandale T. King
Rochester, NY

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ON THE COVER

The original Catocin Furnace located near Thurmont, Maryland. Built in 1774, the furnace was restored nearly two hundred years later. MATRIX photo, 1994.