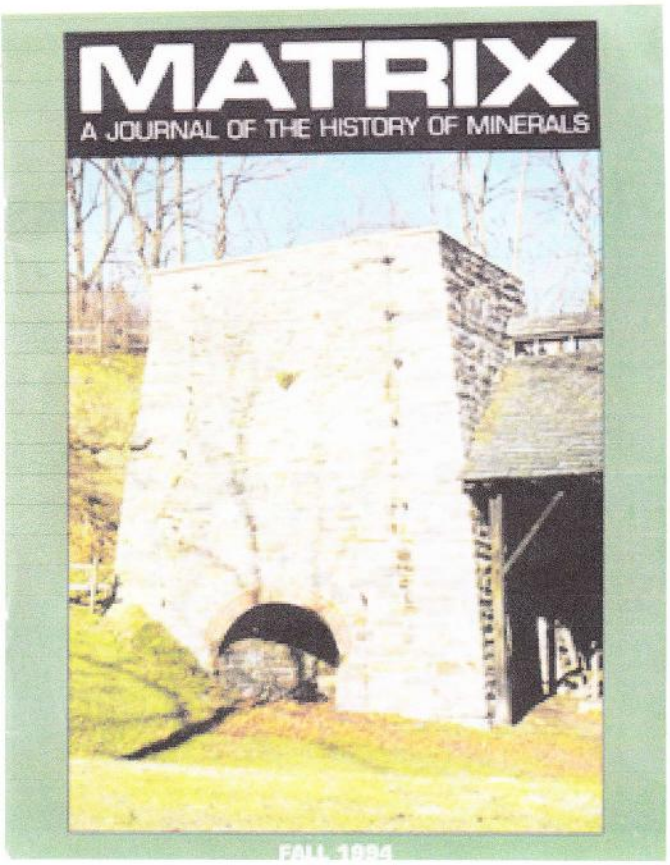

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The Minerals of Frostburg

by
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Introduction

In the farthest southwestern region of Maryland near the headwaters of the Potomac River, is a manmade landmark called the Fairfax Stone. This monument which marks an early boundary settlement between Maryland and West Virginia, overlooks a region of great natural beauty and early economic wealth. Settlers moving westward over the Alleghany Mountains found the rugged hills to be rich in iron ore, coal, clay, and high grade sandstone. While these natural resources lacked glamour for the mineralogist, they were important to the early economic growth of the young nation. By the end of the nineteenth century the region of western Maryland had contributed heavily to industrial growth through the mining and processing of pig iron, bituminous coal, fire brick, and glass. The twentieth century, however, ushered in a decline of the region's industrial strength. While the beauty of the region yet remains, the mining empires that spread from Cumberland to Friendsville have faded from former glory. The flavor of the region today might best be described in the words of Maryland author and historian Gilbert Gude:

"For the first fifty miles from the Fairfax Stone this region is a Brigadoon world—a misty green valley of Alleghany coal country, lumber towns, company coal towns and ghost towns. This is a piece of Appalachia, and is markedly different from the foothills and coastal plains of the east. Here, at its beginning the river runs vigorously through many small rapids and falls, whereas at its end it flows leisurely with the tides."

One of the treasures of this Brigadoon world was an earth substance known as fire clay. The term fire clay has been used to describe a clay variety found in Carboniferous rocks in association with bituminous coal. It was discovered that fire clay had considerable resistance to heat, and when vitrified produced a superior lining for furnaces. Out on Big Savage Mountain near the coal mining village of Frostburg existed an exceptionally high deposit of fire clay. Shortly after the Civil War, the mining of fire clay and the manufacture of fire brick was established at Frostburg. Mt. Savage Fire Brick was soon established as the quality standard for industrial refractory material.

Frequently the clay deposits on Big Savage Mountain were contaminated by nodules of red to brown colored siderite. The iron carbonate nodules, refered to by the miners as "ore balls," ranged in size from a half dollar to several feet in diameter. To the delight of early mineralogists, the nodules were frequently filled with minerals. Frostburg minerals, particularly iridescent siderite and water clear barite, can be found in collections around the world. In spite of the popularity of Frostburg minerals, little information has been published about the location. This article was prepared to provide a historical perspective of an obscure locality that has produced collectable mineral specimens for more than a century.

"He observed the mineral assemblage at the Frostburg tract and made particular note of the beautiful quartz crystals found in the nodules."

The Early Years

Frostburg is a mining town. It's growth and survival have been intertwined with the mineral wealth which occurred all around it and even beneath it. The mountain perch which is now Frostburg, can trace its roots to the year 1800 when three houses were built in the area. One of the first settlers was an innkeeper by the name of Meshach Frost. Because of the area's natural beauty, Frost named the settlement Mount Pleasant. In 1812, the fortunes of Mount Pleasant took a turn for the better, because of the construction of a turnpike known as the National Road. This mountain conquering road (now U.S. Rt. 40) opened up commerce and transportation between Washington, D.C., Baltimore and the expanding westward growth through Pittsburgh. Meshach Frost prospered as his tavern became a popular stopover for teamsters engaging in the transportation of goods along the National Road. The location soon became known to travelers as "Frost's Town," a monicker which evolved to Frostburg. In the meantime Frost acquired large tracts of land in the vicinity of his business establishment, and began the subdivision of parcels with an eye to the development of the town.

The commercial development of Frostburg took another dramatic upturn with the discovery of coal on the "Sheetz Farm," located a mile and a half east of the village. The 1839 discovery spawned a flurry of exploration activity throughout the Frostburg region. Soon evidence of other mineral occurrences in the Carboniferous rocks of the area were uncovered. Deposits of iron carbonate ore were found in proximity to the coal beds and in 1837 a coke-fired furnace, the first in the region, was built along the Georges Creek Valley to the south, at Lonaconing. By 1840

An 1890 advertisement prominently featuring Mt. Savage fire brick. Reproduced from the Alleghany Centennial Directory.

several more furnaces were constructed to north of Frostburg at the village of Mt. Savage. The growth of the coal industry continued to increase and soon attracted the development of rail transportation to the region. By 1850 the population of Frostburg was primarily made up of miners and their families. These residents, mainly foreign-born were of English, Welsh, Scotch, Irish or German extraction.

By the middle of the century, significant interest in the Frostburg clays had been aroused, and in 1865 the Savage Mountain Fire-Brick Works was founded by L.M. Gorsuch. The clay deposits occurred in two distinct varieties. One form was a soft putty-like variety while the other was a hard "flint" clay. Through experimentation it was discovered that a proper mixture (25% soft and 75% hard) of the clays produced a superior heat-resistant brick suitable for furnace lining. Mining the Savage Fire clay proved to be dangerous from the outset. The seams of clay were recovered in much the same fashion as the coal. Mine shafts were developed as the seams were followed and clay extracted. Unlike the coal beds however, there was little tangible warning prior to a tunnel collapse. Gorsuch appointed Thomas Hulbertson, a knowledgeable mining engineer as superintendent of the underground workings and assigned to him the responsibility of mine safety. Hulbertson employed an intricate and closely interconnected pillar support system which enabled the mines to operate in relative safety.

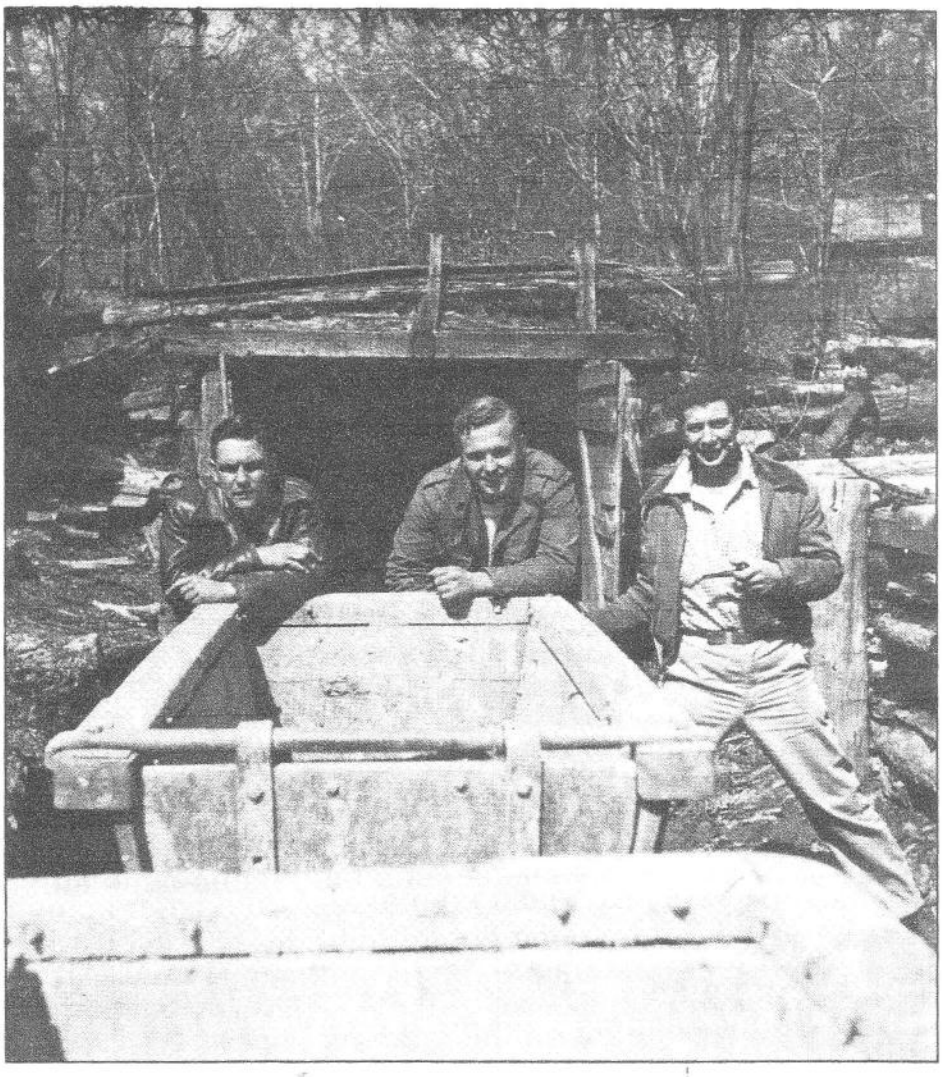
A brick manufacturing plant was established in the south end of Frostburg. When the operation attained peak production, the mine and plant employed 40 men and boys and manufactured 10,000 bricks per day. The flint clay was crushed and mixed with water in order to reduce the mass to a putty-like consistancy. After blending the flint clay with the naturally softer variety, the mixture was molded into bricks and fired in the kilns. Savage Mountain bricks became popular with the steel industry in Pennsylvania and received high praise in the trade journals of the time. As the durability of the Savage Mountain brick became known, more companies opened up operations in the Frostburg area. The Savage Mountain Fire-Brick Works expanded it's own business in Frostburg by acquiring additional clay deposits throughout the region. Following the same geological horizons northward, the Savage Mountain company discovered additional deposits and opened another brick manufacturing plant in Pennsylvania, at Fairhope in Somerset County.

By the turn of the century the fire clay industry in western Maryland had become an important economic contributor to the state economy. Along with the Savage Mountain Fire-Brick Works, several area coal companies began to exploit the fire clay deposits found on their tracts. Among the larger ones were the Union Mining Company and the Maryland Coal Company. The Savage Mountain company was operating its Big Savage tract and tunnel near the top of the mountain when it opened its Frostburg No. 6 mine in 1906. It was on this tract west of town along the National Road, that an interesting assemblage of minerals was first noticed by mineralogists. That same year the noted mineralogist Waldmar Schaller described the crystallographic properties of siderite and barite from the Frostburg Mine. The material described in the American Journal of Science article, had been obtained from the Foote Mineral Company.

About 1915, a geological study of the western Maryland fire clay deposits was undertaken by the Maryland Geological Survey and the U.S. Bureau of Mines. The joint venture utilized the services of a number of scientists. Information and evaluation of the clays and the technology to process them was the responsibility of H.G. Schurecht and Arthur Watts of the Bureau of Mines. The geology, mineralogy and stratigraphy of the clay deposits was assigned to Charles K. Swartz and George M. Hall of the Maryland Geological Survey. Geologist Hall visited each fire clay deposit that was active in the Frostburg district at the time of the investigation. He observed the mineral assemblage at the Frostburg tract and made particular note of the beautiful quartz crystals found in the nodules. The result of this joint investigation produced a monograph entitled "The Fire Clays of Maryland" in 1922.

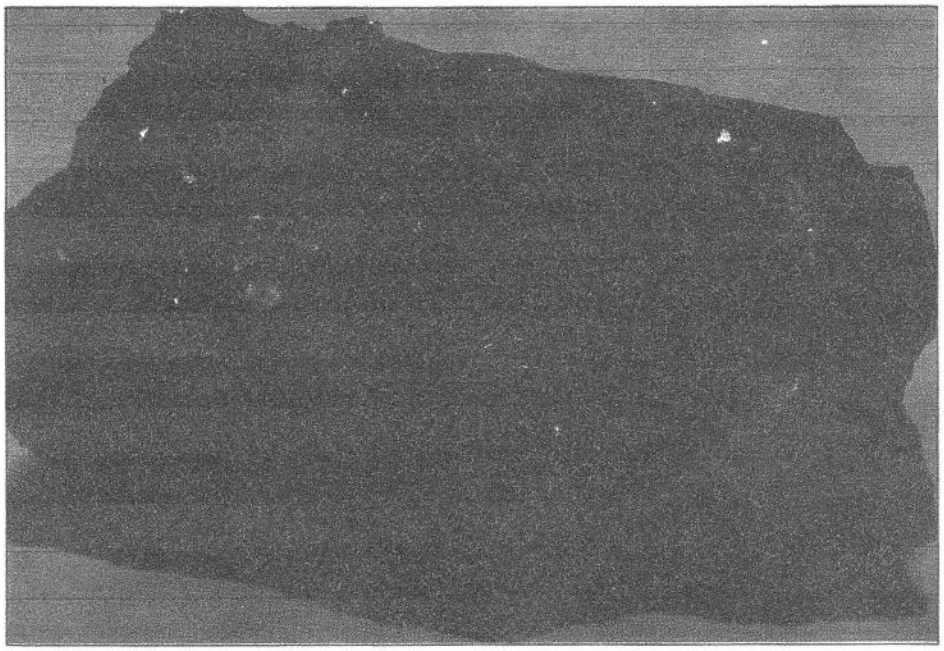
The Mineral Years

The beautiful iridescent microcrystalline siderite clusters from Frostburg are numbered among the classic minerals of Maryland. They are abundant and can be found in many older mineral collections. In spite of the widespread abundance, little mineralogic mention was made in the older literature. The Ostrander and Price 1940 classic "Minerals of Maryland" gives scant notice of the occurrence by ob-



Several views of the Frostburg Mine as it appeared about 1950. Top view shows the stripping operation. On the right, mineral collectors Crawford Issacs, John Glaser, and Harold Levey pose in front of open shaft. Photos courtesy of Harold Levey.

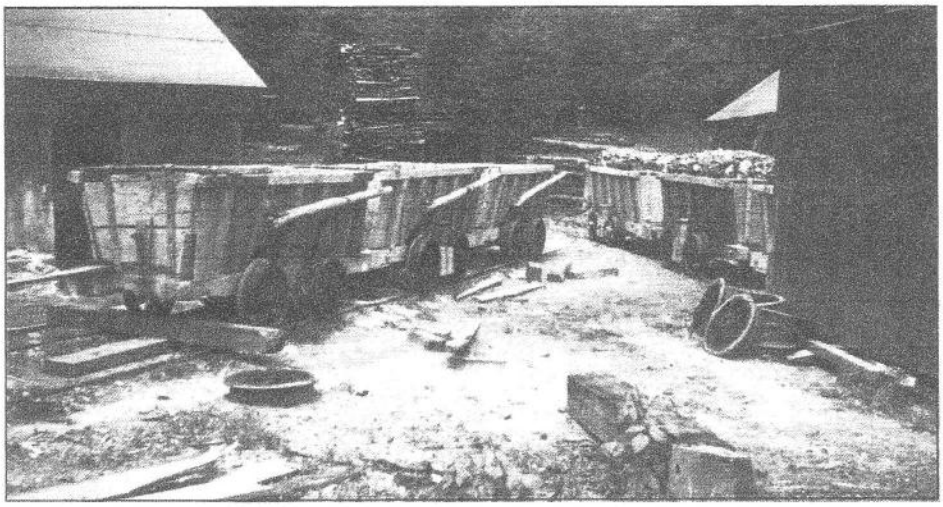
serving that siderite and barite were "reported" at Frostburg. This citation was undoubtedly in reference to the Schaller article in the American Journal of Science. Some time during the 1940's the Frostburg Mine was visited and collected by noted Virginia mineralogist, Ned Blandford (letter, Harold Levey to Fred Parker). Because of the need for gasoline rationing during the war years, this effort was likely to have transpired after 1945. During that same period some interest in visiting the location was generated by members of the Natural History Society of Maryland. As news and interest in the Frostburg minerals gained in popularity, information about them became more available. In addition to siderite and barite, a number of other species were found and identified. In addition to quartz crystals, other species included pyrite, sphalerite, galena, goethite, hematite, marcasite, millerite, and dickite. The discovery of millerite by Ned Bland-



Millerite on siderite from the Frostburg mine. Specimen collected in 1940 by Ned Blandford, now in the Fred Parker collection. Photo by Gary Grenier.

ford was a first for that species in Maryland. The nickel sulfide was found in beautiful needle-like sprays, and remains the rarest and most desirable of the minerals to occur at Frostburg.

In 1953, Rocks and Minerals magazine published the first contemporary article about collecting minerals at Frostburg. The article entitled "Minerals of the Frostburg Fire Clay Mine" (May–June 1953) was written by Harold Levey of Baltimore. Levey became acquainted with the Frostburg occurrence after having seen some microspecimens in the collection of the late Paul Desautels, who was living in Baltimore at that time. During the collecting season of 1950, 1951, and 1952, Harold Levey and a number of other eastern Maryland collectors visited and collected the Frostburg occurrence. These avid mineralogists were able to collect the entire suite of Frostburg minerals including the elusive millerite. The article written by Levey for Rocks and Minerals magazine remains the best collector description of the Frostburg location in print. The location photographs featured with this story were taken during one of the Levey field trips and graciously loaned to MATRIX. They have never before been published, but are part of the same sequence of photographs used in the 1953 article. At the time of the Levey visit, fire clay was being recovered by shaft mining and strip mining methods. Fred Parker reports (personal communication) that many of the Frostburg mineral assemblage can still be collected at the strip mine location. He noted that millerite was not among the recent species to be found.



Additional view of Frostburg workings showing ore cars near the shaft. Photo courtesy of Harold Levey.

Do other Frostburg fire clay occurrences still occur? It is likely that a number of collectable locations yet remain. In 1986 the author and George Buchanan collected a similar suite of minerals at the abandoned Savage Mountain Fire-Brick mines at Fairhope, PA. Clay mines were also located at a number of other western Maryland locations including Grantsville, Mt. Savage and Ellerslie. Unlike many historic locations in eastern Maryland which have been lost to urban development, a number of fire clay occurrences in the Frostburg area yet remain.

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