

Sources and bibliography

Published sources (Books, articles, etc., with bibliographic data.)  
Article on pyrite mine in Manassas Journal Messenger by Bonnie Atwood (date unknown).

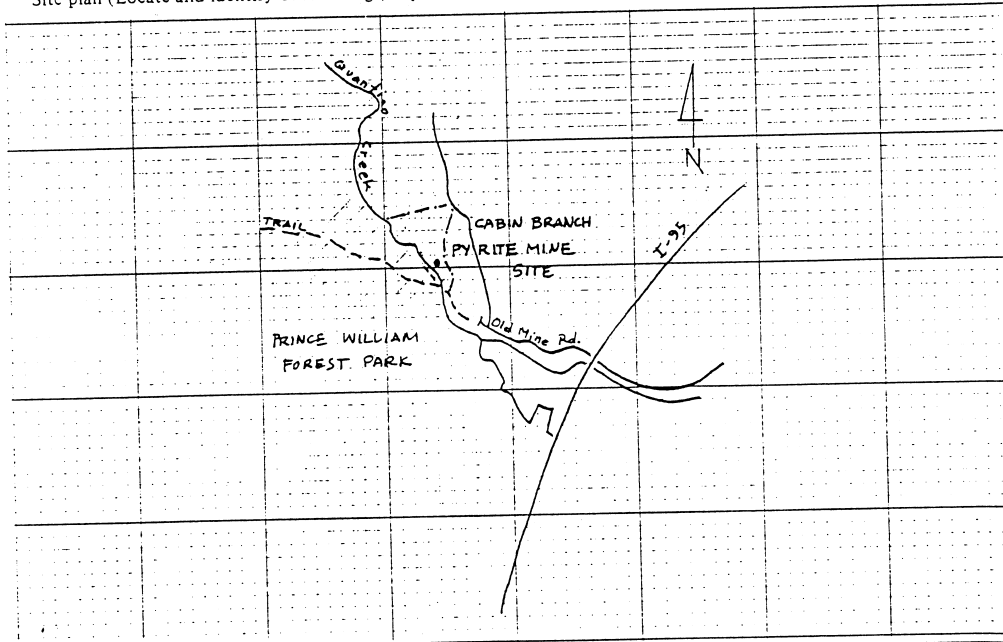
Primary sources (Manuscript documentary or graphic materials; give location.) P. W. Forest Park has an 8-page manuscript history of the mine, including a contemporary map of the site identifying 78 structures (1916, 1919); "The Cabin Branch Mine," by A.L. Mountjoy, (continued next page).  
Names and addresses of persons interviewed. Mr. Cecil Garrison, resident of Dumfries, worked in mine.

Plan (Indicate locations of rooms, d



4351 Fairfax House Site 1178 - Chimney USA 76-74

Site plan (Locate and identify outbuildings, dependencies and significant topographical features.) Don Carter in F.9



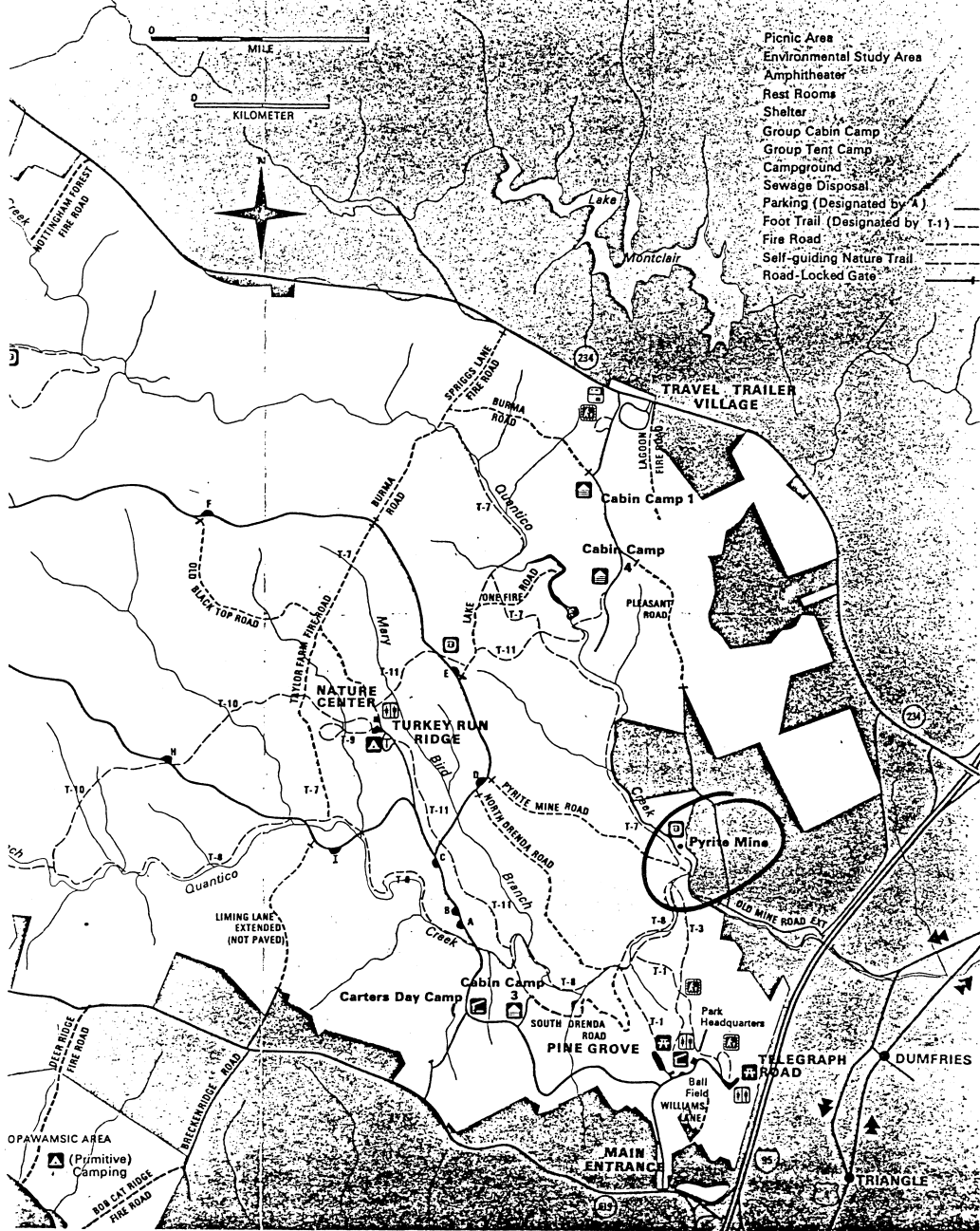
Name, address and title of recorder: Frances Jones, Architectural Historian - Surveyor, NPS

Date APR 10 1991



4351 Fairfax House Site ..  
11/78 chimney with  
76-74 Don Curtis in f.g.

# ICE WILLIAM FOREST PARK



10/78

THE CABIN BRANCH MINE

AS ONE WALKS THROUGH THE PRINCE WILLIAM FOREST PARK TODAY ONE CAN HARDLY REALIZE THAT SOME 75 YEARS AGO THIS FOREST WAS A MINING COMMUNITY EMPLOYING SEVERAL HUNDRED WORKERS, AND BRINGING A SUBSTANTIAL ECONOMY TO DUMFRIES AND THE SURROUNDING AREAS.

MEN FROM AS FAR SOUTH AS STAFFORD COUNTY WALKED TO THIS MINE EACH DAY, WORKED 10 HOURS, AND THEN WALKED HOME...

IT WAS ABOUT 1890 THAT PYRITE WAS FOUND IN QUANTICO CREEK. A SHAFT WAS SUNK TO VERIFY THE PRESENCE OF THE ORE AND THE TEST PROVED POSITIVE. FROM 1908 TO 1920 MORE THAN 200,000 TONS OF PYRITE WAS SOLD FOR MORE THAN \$1,168,513.00.

SCHIST, CONTAINING QUARTZ AND HARNBLEND MAKE UP THE ROCK OF THE MINE AREA. THE PYRITES IN LEN SHAPED DEPOSITS ARE AMONG THE SCHIST. THE CABIN BRANCH LEN IS 1000 FT. LONG AND UP TO 14FT. WIDE SITTING ON AN ANGLE OF 60°. SULPHUR CONTENT OF THE MINE ORE IS 40% TO 50%, CONSIDERED QUITE HIGH. BECAUSE OF ITS SIMILARITY IN APPEARANCE TO GOLD, PYRITE IS SOMETIMES CALLED "FOOL'S GOLD".

PYRITES ARE MINED FOR THE MANUFACTURE OF SULPHURIC ACID. THE 1916 PRE-WAR PRICE WAS \$4.64 PER TON, THE 1917 POST-WAR PRICE ROSE TO \$15.75 PER TON. VIRGINIA HAD OUT-PRODUCED ALL OTHER STATES AS OF 1917 WITH 37% OF THE TOTAL U.S. PRODUCTION.

CABIN BRANCH MINE WAS A TOTAL OPERATION ALMOST

*Read before Dumfries Historical.*

SELF-SUFFICIENT. IT WAS THE SOLE SUPPORT OF DUMFRIES DURING ITS PRODUCTION YEARS. — .

THE MINE HAD THREE SHAFTS, NOS. 1, 2, 3. NUMBER 1 AND 3 WERE VERTICAL WITH NUMBER 2 ON AN INCLINE OF 25° TO 55°. NUMBER 3 SHAFT WAS THE DEEPEST - 2,400 FEET ACCORDING TO TWO SOURCES. A DOCUMENT WRITTEN IN 1917 REPORTED THE DEPTH TO BE 1800 FT. WHICH LEAVES A POSSIBILITY OF EXPANSION TO 2,400 FEET BEFORE 1920.

A NARROW GAUGE RAILROAD CONNECTED THE MINE TO THE WHARVES ON THE POTOMAC RIVER AT BARROWS SIDING ABOUT SEVEN MILES DISTANCE. CONTRARY TO SOME REPORTS THIS NARROW GAUGE RAILROAD WAS NOT PART OF OR CONNECTED TO THE R. F. & P. RAILROAD. AT THE MINE SITE THIS RAILROAD CONNECTED THE SHAFT, CRUSHER MILL, AND OTHER BUILDINGS. THREE STEAM ENGINES RAN ON THE TRACKS, THE DEWEY, VIRGINIA CREEPER, AND THE DINKEY NAMED BECAUSE OF ITS SIZE. ALSO AT THE MINE WAS A SKIFF NAMED BECAUSE OF ITS SIZE TO HAUL ORE UP AN INCLINE TO THE HEAD FROM WHERE THE ORE WAS GATHERED BEFORE BEING PROCESSED. . . .

THERE WERE ABOUT 70 BUILDINGS AT THE MINE INCLUDING A BLACKSMITH SHOP, CARPENTER SHOP, WORKERS QUARTERS, SAWMILL, COMMISSARY, SUPT. HOUSE, AND THE DETRICK HOUSE. TODAY LITTLE REMAINS TO SHOW EVIDENCE OF A ONCE THRIVING ECONOMY.

THE MINING PROCEDURE WAS EXPLAINED WITH GREAT DETAILS AS MR. CECIL GARRISON REMINISCES.

THE FIRST STEP WAS TO CONSTRUCT THE NECESSARY BUILDINGS AND BEGIN TO SINK THE SHAFT. UNLIKE SOME OF THE

OTHER MINES IN VIRGINIA, CABIN BRANCH SHAFTS HAD TO BE TOTALLY SUPPORTED BY TIMBER DUE TO THE COMPOSITION OF THE COUNTRY ROCK. ABOUT EVERY 100 FEET OR SO A HORIZONTAL "LEVEL" WOULD BE CUT INTO THE POCKET OF ORE.. THESE LEVELS HAD TO BE SUPPORTED BY TIMBERS.

TRANSPORTING THE ORE IN EACH LEVEL WAS ACCOMPLISHED BY HAND PUSHED WAGONS ON TRACKS. THESE WAGONS WERE PUSHED TO THE SHAFT WHERE THEY WOULD BE DUMPED INTO A BUCKET SUSPENDED BY A CABLE FROM AN 80 FOOT HIGH "PITHEAD" BUILD DIRECTLY OVER THE SHAFT OPENING. THIS BUCKET WAS NOT ONLY USED TO HAUL ORE, BUT ALSO TO TRANSPORT THE WORKERS TO AND FROM THE DIFFERENT LEVELS. VARIOUS BELLS SIGNIFIED THE DIFFERENT LOADS: MEN, EMPTY OR ORE. WHEN THE BUCKET REACHED A CERTAIN SECTION OF THE PITHEAD IT WOULD AUTOMATICALLY DUMP THE ORE INTO A WAITING RAILROAD CAR.

AT ANY ONE TIME THERE WERE 200 TO 300 MEN WORKING AT THE MINE (ABOVE AND BELOW GROUND).

THE UNDERGROUND MINING PROCESS WENT ON 24 HOURS A DAY WITH <sup>7 1/2</sup> ~~TWO~~ SHIFTS PER DAY. HUGE CIRCULATING FANS AND WATER PUMPS RAN CONTINUOUSLY TO KEEP THE UNDERGROUND NETWORK CLEAR OF POISONOUS GASSES AND SEEPING GROUND WATER. —

ON EACH LEVEL WORKED A "CREW" WHICH WAS SUPERVISED BY A BLASTER. THIS BLASTER WOULD GET PAID FOR THE NUMBER OF FEET HE COULD PROGRESS IN ONE DAY. THE BLASTER

WITH A GOOD CREW COULD MAKE QUITE A GOOD SALARY.

SOME OF THE MEN IN EACH CREW WERE: THE "DRILLER", WHO DRILLED THE HOLES FOR THE DYNAMITE; THE "MUCKERS", WHO LOADED THE ORE INTO THE WAGONS; THE "TIMBERMAN", WHO MADE SURE THE ROOF WAS PROPERLY SUPPORTED; AND THE "POWDERMAN", WHO CARRIED THE DYNAMITE FROM THE POWDER HOUSE TO THE LEVEL WHERE IT WAS NEEDED. . .

AFTER THE ORE WAS BROUGHT UP TO THE SURFACE IT WAS TRANSPORTED BY THE NARROW GAUGE RAILROAD TO THE ORE BINS. FROM THE ORE BINS, THE PYRITE WAS HAULED UP THE INCLINE OR RUNWAY TO THE HEAD FRAME WHERE THE MILLING PROCEDURE BEGAN.

THE MILLING PROCEDURE IS GENERALLY EXPLAINED AS FOLLOWS: THE PRODUCT WAS DIVIDED INTO THREE CLASSES: LUMP, SPALL AND FINE. LUMP WAS FIRST GRADE THAT REQUIRED NO SORTING. SPALL WAS FIRST GRADE ORE BROKEN TO PASS A 2.5 INCH RING AND FREED FROM FINES BY SCREENING. FINE ORE WAS UNDER 3/8 INCH IN SIZE IN THE MILLING PRACTICE AT THE CABING BRANCH MINE. THE ORE FROM THE HOIST WAS DUMIED ON A 2.5 INCH GRIZZLY. OVERSIZE ORE GOING TO A LUMP STORAGE BIN. HAND SORTING SEPARATE THE SLATE FROM FIRST CLASS LUMP WHICH WENT TO A SPALLING FLOOR. THE FINER IMPURE ORE WENT TO A ROLL-JAR CRUSHER. THE LARGER LUMPS WERE BROKEN BY HAND AND SHIPPED WITHOUT FURTHER TREATMENT. THE UNDERSIZE FROM THE GRIZZLY WAS TREATED IN A 3 COMPARTMENT HARTZ JIG OR SIEVE. CLEAN PEBBLE ORE WAS SHIPPED AS SUCH. MIDDLINGS FROM THE JIG WERE TREATED BY ROUGHING

ROLLS OF TWO GRADES AND WERE FINALLY TREATED IN 2 COM-  
PARTMENT JIGS.

THE HAD SORTING PROCESS MENTIONED WAS PERFORMED  
BY YOUNG BOYS FOR 50¢ A DAY. THIS IS WHERE MR. CECIL  
GARRISON STARTED HIS DAY AT THE MINE.

THE JIGS OR SIEVES WERE DEVICES WHICH SEPARATED  
THE COUNTRY ROCK FROM THE ORE BY VIBRATIONS AND A WASHING  
PROCEDURE. JIGS WERE LOCATED IN THE MILL AND ALL OF THE  
TREATMENT WAS DONE IN THE MILL. ALL PRIMARY CRUSHING WAS  
DONE IN THE CRUSHER HOUSE.

FROM THE MILL THE ORE WAS LOADED ON THE NARROW  
GAUGE CARS OR RAILROADS AND DELIVERED TO THE DOCKS AT  
BARROWS SIDING NEAR POSSUM POINT.

I THINK WE ALL KNOW THE CABIN BRANCH MINE WAS  
THE MAJOR SUPPORTING INDUSTRY OF DUMFRIES FOR A 30 YEAR  
PERIOD FROM 1890 TO 1920..

THROUGH RAILROAD DEEDS AND OTHER RECORDS ONE  
MAY GATHER THAT THE CABIN BRANCH HAD OWNERSHIP FROM 1899  
TO 1916 AND THE AMERICAN AGRICULTURE CHEMICAL COMPANY  
FROM 1917 to 1920..

THE ORIGINAL OWNERS WERE THE DITRICKS AND THE  
BRADLEYS AND THEIR FAMILIES.

AROUND 1919 OR 1920 IT WAS FOUND THAT A HIGHER  
CONTENT OF PYRITE COULD BE MINED MORE CHEAPLY IN SPAIN  
THAN IN THE UNITED STATES. DURING THIS PERIOD OF ECONO-  
MICAL UNCERTAINTY, THE MINERS WENT ON A STRIKE FOR A PAY  
INCREASE FROM \$4.25 PER DAY TO \$4.50 PER DAY. THE SUPER-



INTENDENT RESPONDED BY CLOSING THE MINE DOWN, SAYING THAT HE WOULD LET THE CABIN BRANCH MINE FILL WITH WATER AND THE FROGS JUMP IN BEFORE HE WOULD RE-OPEN IT.

OCCUPATION OF THE AREA BY THE CIVIL CONSERVATION CORPS IN THE EARLY 1930'S RESULTED IN COMPLETE DISMANTLING OF THE MINE. BUILDING MATERIALS WERE USED FOR THE CABIN CAMPS AND THE SLATE DUMPS WERE USED AS ROADBED MATERIALS.

THE ECONOMY OF DUMFRIES WAS GREATLY ENHANCED BY THE OPERATION OF THIS MINE. THE TOWN OF DUMFRIES PROFITED AS FAMILIES MOVED IN, BOARDING HOUSES OPENED UP AND STORES DID A THRIVING BUSINESS.

TODAY CABIN BRANCH MINE IS ONLY A MEMORY RECORDED ON THE PAGES OF HISTORY.

A. L. MOUNTJOY

References:

1. Department of the Interior,  
Bureau of Mines
2. The Journal Messenger,  
Bonnie Atwood, Reporter
3. Interview with Mr. Cecil Garrison

Fool's Gold

"Fool's gold" they called it. But what was so foolish about it, why was it so special, and what was it like to be one of its miners? These and many other questions come to mind when we speak of Prince William Forest Park's pyrite mine. Here you can discover some answers. Answers not only to questions about pyrite, but also what motivated men to mine in the first place. Dreams for get-rich-quick schemes are age old, no one is immune, and early Virginia was not without her share of propaganda. For example: shortly after the Civil War, "Harper's New Monthly Magazine" described Virginia's resources in the following glowing manner:

Indeed it may be said, without exaggeration, that in the single State of Virginia, in the most singular juxtaposition of what might be considered geologically incongruous materials, is to be found an almost exhaustless fund of God-given treasures, more than enough to pay off our whole national debt, and only waiting the magic touch of capital and enterprise to drag them to light for the benefit of man.

How's that for inspiration! Suggestive enough to urge men to walk, run, or ride to the nearest Virginia mine.

As you walk to the pyrite mine, a long time after that bit of prose was written, remember to look around and consider that your route of travel may resemble one which a pyrite miner walked about 75 years before. That is three quarters of a century ago this Cabin Branch Mine was operated and still we can see how hard its mining process was on the land.

#### THE PROCESS

From sunup to sundown many miners rarely saw daylight. During his 12 hour shift each man surely speculated, "There has to be a better way to earn a living." Yet because he needed the money, he would contribute, however insignificantly, his energy to the total mining process. In brief the operation ran as follows:

At this particular mine 3 shafts were built, 2 verticle and 1 inclined;

all 3 composed of many levels. Because of the crumbly consistency of rock here, supports had to be erected so as not to endanger the miners. After the ore was blasted from the huge lens-shaped deposit, the rock was transported by hand-pushed wagons on tracks of each level. At the shaft, the ore was dumped into a bucket and hauled up to the surface where narrow gauge<sup>+</sup> cars, took it to bins, then to the mill where sorting began. For 50 cents a day child labor sorted it into 3 categories. It was divided much the same as we group things today, i.e., large, medium, and small. However each size of pyrite has an unfamiliar sounding name: lump, spall, and fine respectively. Like most specialized fields, mining has its own words with definite meanings.

#### THE LANGUAGE

For example pyrite is the more formal name for fool's gold. Examining a piece of the rock will show you how easily the sparkling yellow flecks could remind prospectors of gold. Actually gold has a more metallic luster, less eye catching than the glistening pyrite. Fool's gold assumes value equal to its name when gold deposits are occasionally found in the rock, but usually you are the fool if you think pyrite is gold.

Pyrite was measured in long tons, 2400 pounds, 400 pounds more than a standard ton.

Crews were the men who worked in the mine. Each crew had a blaster. Since he was in charge of the men, most probably the blaster was spared much labor. As crew leader, he may have had to only push the handle which set off the dynamite although his duties are uncertain. What is certain is he was paid according to how far he got each day. Therefore blaster with

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<sup>+</sup> Refers to the distance between the rails of the track. Thus, narrow gauge would be a smaller than standard distance.

fast crews got more money than those with slow workers. It might prove to be an interesting study to determine whether blasters who were kind to their crews got more mileage from them than cruel blasters did.

Drillers drilled holes for dynamite, muckers loaded ore onto wagons, powdermen carried dynamite from the powderhouse to where it was needed, and the timberman had to make sure the ceiling had enough support, for if he misjudged the beams' strength the lives of the men could be severely endangered. Clearly you would want to have a reliable timberman.

Even though the bucket referred to in THE PROCESS section is a familiar term, it served an unusual purpose. Not only was it used to haul ore, but also it carried workers to the various levels. Bells were rung to announce each bucket's load. For instance 1 bell might mean empty, 2 ... ore, 3 ... men. When a bucket of ore reached a waiting railroad car, it automatically dumped its contents. Hopefully when the load was a man he had time to jump out before he too was automatically dumped into the waiting car.

#### THE MEN

As for who worked there, 200 to 300 men labored both above and beneath the ground. Their workdays were by no means short. Since the mining continued 24 hours a day and there were 2 shifts of men, it is easy to divide the miner's life into 12 hour workdays. Many of them even slept at the mining site. Consider then how we complain when we cannot leave behind all work after we have put in 8 hours. Eventually mining could come to envelope their entire lives. No wonder they finally went on strike for a pay increase. If you dedicated most of your waking hours to a project, you would want to feel it was worthwhile; pricetags tend to make ordinary labor seem more important. If that many people put that much time into mining, surely the site must be impressive.

#### THE SITE

"But there's nothing here!" Such might be your immediate reaction upon seeing the Cabin Branch Mine Site. That is because the Civilian Conservation Corp dismantled the structures in the 1930's and used the materials to build the cabin camps now in the park. However if you continue down the trail beyond the barren site you can find remnants of some of the approximately 70 buildings used between 1889 and 1920. Were all those really necessary? After thinking about it you will probably conclude they were. As was stated, many laborers lived at the mine and that would require a variety of buildings: a blacksmith shop, carpenter shop, sawmill, henhouse, icehouse, and workers' quarters to suggest a few. Black workers lived apart from white workers and the former's housing was labeled "colored quarters." There was a company store too that sold, as an old miner put it, "everything from knitting needles to 2 horse wagons." A company official made daily trips from the store to the main office where the miners' wages were recorded. This was to insure that the workers did not purchase more from the company than they could afford.

Obviously fool's gold was considered important enough to warrant this mini-city for miners.

#### THE PURPOSE

If it wasn't true gold, couldn't it have a purpose anyway? It could. Sulfur is extracted from pyrite. Take a deep breath at the site and you may smell the evidence. Of note the yellow residue on the ground and under rocks. You might even want to lick a tiny portion of the sulfur off your finger. Bitter? When you have sulfur you can get sulfuric acid, and sulfuric acid is a basic chemical widely used in industry for things like glass, soap, bleach, acid, textiles, paper, dye, medicine, sugar, rubber, starch, syrup, leather, fertilizer, sheet metal cleaning, precious metal refining, etc.

With all those uses, pyrite would be much in demand. And when an item

is in demand, the people who have that item can make money, Such was the case with the nearby town of Dumfries.

#### THE TOWN

At one time this area boasted prosperous farms, farms which supplied tobacco for exportation from Dumfries. Second in financial importance only to New York, it was an important US seaport. Eventually minerals from the soil were depleted, the tobacco industry floundered along with the Dumfries shipping port, and a new source of income was sought.

Pyrite mining filled the bill. Imagine the town's relief when ore was spotted and verified to be in the Quantico Creek, and the test shaft encountered pyrite. Copper and iron were also recovered, but although silver, gold, and lead were present they were not excavated because of their low concentrations. Thus, a 31 year business, owned by the American Agriculture Chemical Company, was started in 1889, providing a livelihood for Dumfries.

#### THE DEMISE

When the new twenties decade began, pyrite mining at the Cabin Branch Mine ended. Several events led to its demise. 1.)Sulfur was discovered elsewhere. 2.)Companies were hesitant to enter into long term contracts if sulfur might be more cheaply obtained in the future. 3.)Probably the most influential episode was when the miners decided to strike for a pay raise, an increase from \$3.50 a day to \$4.00 a day. The superintendent responded to this "unreasonable" 50¢ demand by closing the mine and saying he would watch it fill with water and let frogs jump in before he would reopen.

Perhaps it is just as well. Mining severely scars the land, as you can see.

#### THE EFFECT

Vegetation is sparse, stream life is miniscule if that. Rainwater seeping through the ground into the creek becomes very acidic, a condition most wildlife shuns. Also, the wind has helped erode the exposed earth

where the shafts were sunk.

We have left our mark, not easily erased. Was it worth it? History does not change; it is useless to condemn our predecessors for their actions. Can you resist the impulse to imagine mountains of wealth when the sun shows off metal speckled rocks, or when you actually hold the "gold" in your palm. We are conjuring the same dreams those miners did, and that may be where the value lies.

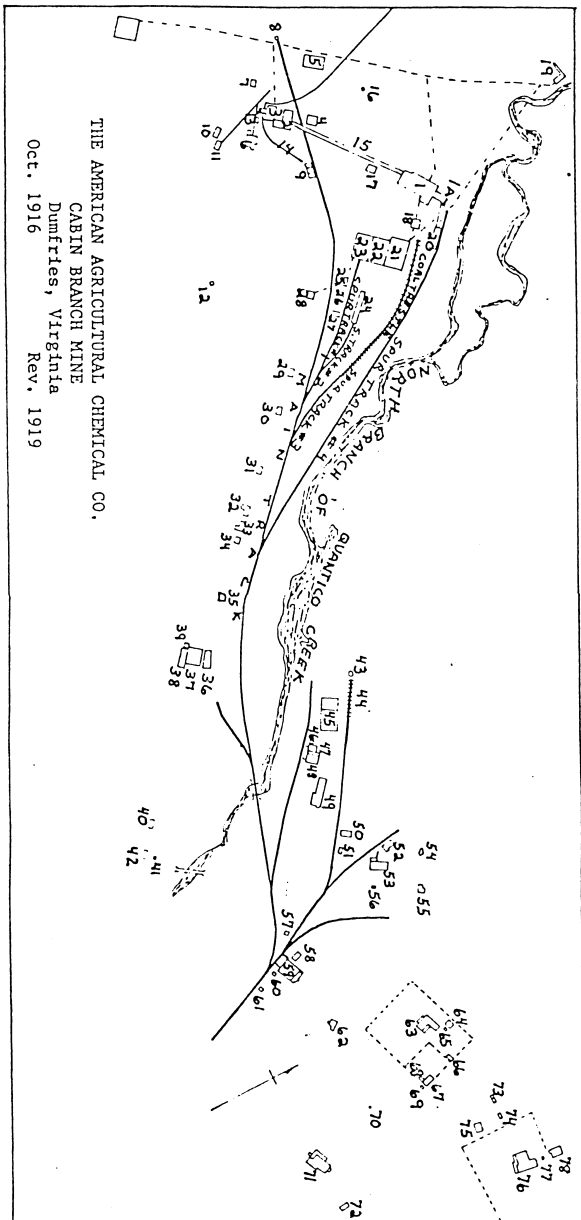
Numbering Key

CABIN BRANCH MINE

- |                          |                           |
|--------------------------|---------------------------|
| 1. Mill                  | 40. House                 |
| 1A. Classifier Room      | 41. Old Shaft             |
| 2. Crusher House         | 42. House                 |
| 3. Head Frame            | 43. Water Tower           |
| 4. Hoisting Engine       | 44. Coal Trestle          |
| 5. Change House          | 45. Old Machine Shop      |
| 6. Blacksmith Shop       | 46. Tool House            |
| 7. Shed                  | 47. Store House           |
| 8. Incline Hoist Shed    | 48. Miner's Camp          |
| 9. Ore Bins              | 49. Saw Mill              |
| 10. Shed                 | 50. Freight House         |
| 11. Carpenter Shop       | 51. Oil House             |
| 12. Powder Shop          | 52. Old Store             |
| 13. Main Shaft           | 53. Open Shed             |
| 14. Runway Shelter       | 54. Dwelling              |
| 15. Conveyor House       | 55. Dwelling              |
| 16. Cap House            | 56. Old Shaft             |
| 17. Transformers         | 57. Shed                  |
| 18. Water Tower          | 58. Shed                  |
| 19. Pump House           | 59. Commissary            |
| 20. Concentrate Bin      | 60. Shed                  |
| 21. Boiler Room          | 61. Shed                  |
| 22. Engine Room          | 62. Building or shed      |
| 23. Machine Shop         | 63. Dwelling              |
| 24. Locomotive Shed      | 64. Shed                  |
| 25. Ware House           | 65. Shed                  |
| 26. Pipe Shed            | 66. Unknown               |
| 27. Oil Shed             | 67. Shed                  |
| 28. Office               | 68. Sheds                 |
| 29. Old Colored Quarters | 69. Sheds                 |
| 30. Old Colored Quarters | 70. Spring House          |
| 31. Old Colored Quarters | 71. Superintendents House |
| 32. Old Colored Quarters | 72. Wood Shed             |
| 33. Old Colored Quarters | 73. Men Houses            |
| 34. Old Colored Quarters | 74. Men Houses            |
| 35. Old Shaft            | 75. Ice House             |
| 36. Old Ore Bins         | 76.* Detrick House        |
| 37. Old Mill             | 77. Well                  |
| 38. Old Pit Head         | 78. House                 |
| 39. Head of Old Incline  |                           |

\* Mr. Detrick discovered the mine.





THE AMERICAN AGRICULTURAL CHEMICAL CO.  
 CABIN BRANCH MINE  
 Dumfries, Virginia  
 Oct. 1916 Rev. 1919



### FOREST RETURNS

Beginning with the arrival of the area's first settlers in the late 17th century, forests were cut and the land was plowed. Lumber and fur, tobacco and grain—products of virgin forests and fertile soils—were carried to distant countries from the then thriving port of Dumfries at the mouth of Quantico Creek. In this era of plenty, few conservation practices were observed, and the soil soon lost its fertility. Light and erodible, it was washed away by rains and carried downstream where it silted up the Dumfries harbor. Thus, abuse of the land caused the port and the local area to decline. Most of the farming had stopped by the start of the 20th century. Soon the unproductive soil began to revert to forest, and the area comprising the park became a patchwork of abandoned farms and of woodlands in various stages of natural succession. These have since gradually given way to a beautiful forest where man comes and goes as a visitor.

The park, named for the Virginia county in which it lies, now harbors 89 known species of trees and shrubs. It includes pure stands of Virginia pine, a large variety of hardwoods, and a green understory of mountain laurel, holly, dogwood, redbud, and other shrubs and small trees. Among the resident animals are white-tailed deer, red and gray foxes, beaver, raccoon, opossum, flying squirrel, gray squirrel, skunk, and woodchuck; wild turkey, ruffed grouse, red-tailed hawk, and numerous species of songbirds; several kinds of amphibians and warm-water fish; and numerous reptiles, including the copperhead snake.

Erosion by the North and South Branches of Quantico Creek has removed the Coastal Plain sand, gravel, and clay, and exposed the ancient granite, schist, and quartzite of the Piedmont. Before 1920, pyrite, containing iron and sulfur, was mined near the confluence of the two creek branches.

duct trips and give illustrated talks on natural history. The center is open daily during summer weekends during winter.

An Environmental Study Area (ESA) on a long abandoned farm site in the park is reserved for field trips by school classes and organized groups. Teaching materials adapted to the ESA can be obtained in advance by calling park headquarters.

### HELP PROTECT THIS PARK AND YOURSELF

Man's present intrusion on this landscape is far less upsetting than it once was. You can help protect the park further by remembering to leave plants and animals undisturbed. You, and those who come after you, will enjoy the park more if everyone leaves camping and picnic areas the way they would like to find them. Please observe these regulations and tips for a safe, comfortable stay.

Remember, safety is no accident.

Accidents must be reported as soon as possible to a park ranger or to park headquarters.

Motor vehicles should not be driven or parked on grassy areas or road shoulders. Please observe posted speed limits.

Fires are permitted only at established picnic areas and campgrounds, and then only in fireplaces provided. Extinguish fires completely before leaving, even for a temporary absence.

Hunting is prohibited. Firearms, fireworks, knives with blades more than 7.6 centimeters (3 inches) long, archery equipment, and slingshots are not allowed in the park unless adequately cased, broken down, or otherwise packed to prevent their use.

Natural features are strictly protected. The destruction, injury, detachment, removal, or disturbance of any natural feature, such as trees, wildflowers, rocks, or wildlife, is prohibited.

Pets must be kept on a leash.

Alcoholic beverages are prohibited.

Lost and found items should be reported to park headquarters.

Climbing trees and park structures is considered dangerous and is not permitted.



Along the

Quantico Quad.

