

A Tale of Azurite and Cuprite at Frederick County's New London Mine

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A number of months ago, Bob Hudgins collected some awesome azurite---for anywhere in Maryland, that is--- among rocks that were piled up in conjunction with improvements to Gas House Pike near the former site of the New London Copper Mine in Frederick County. It was a particularly interesting find, since azurite had never been noted at the New London Mine in any literature of which we were aware. The rock-pile that yielded it had been hauled away by county workers and dumped some time ago. If only we could find out where. Meanwhile, Bob had obtained permission for us to prospect an adjacent heavily wooded hillside that had been mined more than a century ago.

On October 21, 2008, Harold Levey and I joined Bob to comb over what rocks, mostly phyllite, we could find upon or immediately beneath the surface of that hillside. Very quickly, I managed to uncover some interesting barite. Minutes later, Bob picked off the ground an even more interesting rock coated with what we surmised to be cuprite.

Then, quite suddenly and unexpectedly, the owner of the hillside appeared. Accompanying him were a teenager and a dog that was actively chomping sticks into pieces. As Harold and I introduced ourselves, Bob, pickaxe in hand, approached to see what was happening. It turned out that we were trespassing on the property of someone other than whomever had given Bob permission for us to collect. Notwithstanding, the owner was most gracious. It surely didn't hurt that Bob, thinking he'd find more, presented him with his "cuprite" find.

We prospected for the next couple hours and found little that appeared to be more interesting than a bit of unspectacular chalcocite and malachite. Harold wondered off at one point and returned to present me with a rock that contained some curious-looking micro quartz crystals. He suggested I scrutinize it on "some snowy December evening."

A bit later, the owner reappeared to show us around the hillside. Then he escorted us to his house to look at some old maps of the area. One of the maps showed the exit of a drainage adit at the point where Bob had collected his azurite samples. Earlier, Bob had questioned whether the rocks amongst which he'd collected them could have been delivered from a different location for use during the roadwork. He now had a different possibility to consider: Could this adit be the azurite source rather than the more studied ore dumps?

The plot soon later thickened once again: After arriving home, Bob examined some of the malachite he'd collected under a microscope and noticed "small purple patches of what appears to be azurite." As for cuprite: Bob has since discovered some "red patches" on samples he collected. He shared with me via Email the following: "They appeared to be clear, bright red crystals similar to some I had previously thought to be red sphalerite or hematite. Also there were red needles

that could be hematite or tourmaline. On the other hand, there's a strong probability that the red crystals and needles are cuprite."

Even more recently, Harold came up with yet another theory that could relate to both the azurite and the cuprite: The mining of ore wasn't the only thing to happen along that hillside, he noted. We know that lot of ore was crushed up and processed there. The New London Mine was right in what you'd call the "copper belt." Perhaps ore from other localities was brought there to be processed as well.

And regarding the azurite: Bob, at the last minute, added one further possibility: "Another azurite source that I did not address is related to the normal progression of azurite to malachite. Thus if you find malachite, it originated, however briefly, as azurite. Malachite is derived from azurite through hydration and loss of CO₂. The material that had been trapped under the road-bed was almost certainly exposed to high levels of CO₂, so that either it did not progress to malachite, or it retrogressed from malachite to azurite. The progression does not take long but retrogression rates haven't been discussed in popular publications."

—Submitted by Jake Slagle