

The Woodman Institute, Dover, NH

Some Notable NH Specimens and Miss-identifications

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The Woodman Institute, Dover, New Hampshire (Figure 1), has the largest public mineral display in the state. The museum also has several large collections of natural history specimens (insects, birds, mammals). The mineral collection occupies two rooms, (Figures 2 & 3). This collection features specimens from around the world, but has a good content from New Hampshire. Most of these were donated decades ago from former New England collectors. Several of these specimens are the only examples known to the author, a passionate NH species collector. Other specimens were of interest because they were reported from localities unknown to the author.

My first visit to the museum was in 2010. Specimens of native arsenic, rhodonite, and petalite particularly caught my eye. Although these specimens were visually plausible, none were totally convincing. I inquired if I might be allowed to take a grain sample from these for analysis. The response from the museum director was an adamant, firm, NO ! Years went by and the museum staff changed. I learned that Maine collector, Pat Bigos, had become a museum advisor. Being a friend of Pat, I inquired if he might facilitate a visit to the museum and provide access to some of the specimens of my interest. The reply was affirmative and we visited in March, 2022. Permission was granted to remove specimens from the display cases to enable better photos and to select grain samples for analysis.

What follows is a discussion of these findings. I have also included photos of specimens from little known New Hampshire localities.

Rhodonite, Benton NH. (Figure 4). 6 cm specimen. This specimen bares a remarkable resemblance to similar ones that I collected from a Rt. 112 ledge in Easton, NH. Even the gneiss matrix is identical. The EDS analysis result from my Easton specimen, as well as this Benton one, clearly showed it to be fine-grain almandine garnet.

Rhodonite is an elusive NH species. Phillip Morrill's *New Hampshire Mines and Mineral Localities* (1960) reports it in "/" from Hinsdale and Winchester. (The "/" indicates a questionable occurrence.). My self-collected Hinsdale specimen's optical analysis suggests a combination of rhodonite, spessartine, and rhodochrosite; hardly a stellar example. Harvard has a Stoney Mtn. Winchester specimen (#124890), collected by Steve Eberfield in 1984. I have searched the Stoney Mtn. area without success. Photos of both the Hinsdale and Winchester specimens are on my web site: <https://mindatnh.org/Rhodonite%20Gallery.html>

Arsenic, Jackson, NH. (Figure 5). #WI510007. 5 cm specimen (estimate). The specimen was donated by Edward Nevison. Phillip Morrill reports arsenic from the Eastman Hill Tin Mines. Mindat photos of native arsenic show it to be soft, dull, sub-metallic. No areas on this Woodman specimen have this appearance. I took a grain from the closest appearing area. No arsenic was detected. Perhaps sampling several areas on this specimen would give a positive result.

Petalite, Parker Mtn. Mine, Strafford, NH. (Figure 6). #WI640067. 8 cm specimen. Petalite has been reported from the Parker Mtn. Mine. This is the only known purported example of Parker Mtn. petalite known to the author (or from any other NH locality as well). How this petalite specimen was identified is uncertain. The color and luster of some specimen areas are consistent with petalite. Petalite chemistry, $\text{LiAlSi}_4\text{O}_{10}$, has the same elements as eucryptite: LiAlSiO_4 and spodumene: $\text{LiAlSi}_2\text{O}_6$, but with different Al:Si ratios. A relatively accurate quantitative analysis should differentiate which of these three lithium-aluminum-silicates that this specimen actually is.

EDS analyses from two different grain samples (Bigos 2016 and author 2022) have failed to confirm petalite. The first analysis favored a spodumene identification, the second an aluminum poor silicate. The soft pink coating suggests a moderate alteration is present, perhaps to montmorillonite.

The Parker Mtn. mineral environment, with the common presence of spodumene and eucryptite, is one that could certainly host petalite. The search for a confirming specimen continues.

The Woodman Institute, 15 Summer Street, Dover, NH, is open Wednesday – Sunday, April – November.

Admission for adults is \$15. Web site: <https://woodmanmuseum.org/#visit>

I thank the Boston College SEM – EDS facility for access to support this study.



Figure 1: The Woodman Institute, Dover, NH



Figure 2: Woodman Institute mineral display case.



Figure 3: Woodman Institute mineral display case.



Figure 4: "Rhodonite" (is almandine) Benton, NH



Figure 5: Arsenic Eastman Hill Tin Mines, Jackson, NH



Figure 6: Petalite Parker Mtn. Mine, Strafford, NH

