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GARNETS FROM SHELBURNE: A CASE STUDY OF THE VALUE OF GEOHERITAGE

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ABSTRACT

A report of curatorial work recognizing of the value of geoheritage in museum collections. Tracing the history of a garnet specimen donated to the Nova Scotia Museum in 1905 provides opportunity to learn about the life and contributions of Thomas Vardy Hill. While the market value of natural history collections is difficult (or impossible) to estimate, the role of collections for representing citizens who contributed to the history of science has geoheritage value.

THE VALUE OF MUSEUM SPECIMENS

As a Curator of the Nova Scotia Museum of Natural History, I often think about the Museum's collections and why they are important. I also often wonder, how do we estimate the value of museum collections? The most common and easiest concept of value is market value. If an item is put up for sale at an auction, how much would someone pay for the particular item in the open market? Older things generally become rare over time, and items of exceptional quality will increase in market value. Although easy to understand, this supply and demand model is difficult to apply when the rare items are not, or seldom, offered for sale.

Items in museum collections also have scientific and historical value. Specimens of animals or plants that have become extinct are valuable in terms of the genetic and biological diversity that no longer exists (Cranbrook 1997). Other natural history specimens represent the first one described of a species, the holotype, and stands as the global reference specimen that defines a taxonomic name. Some rock samples in museum collections were obtained with great effort and expense, from sources that are no longer available.

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Other artifacts have a significant history, in terms of time and place and stir emotional responses or have cultural importance that give them an elevated value (Trinchillo 2015). For all of these reasons, estimating the monetary value of museum specimens can be very challenging.

GEOHERITAGE COLLECTIONS

There is growing interest in recognizing and conserving our geoheritage, especially in terms of establishing global geoparks such as the Cliffs of Fundy UNESCO Global Geopark here in Nova Scotia. The Geological Society of America has defined *geoheritage* as "a generic but descriptive term applied to sites or areas of geologic features with significant scientific, educational, cultural, and/or aesthetic value" (National Academies of Sciences 2021). However, there are also new efforts to recognize and assess the geoheritage value of museum collections (Henriques and Pena dos Reis 2015).

CURATORIAL WORK

In the Nova Scotia Museum of Natural History, the geology collection includes many beautiful and interesting minerals. I was recently putting away some mineral specimens that had been on exhibit. I photographed the specimens and updated the database in order to make the records available for a new online display. One of these minerals is a beautiful, deep purple garnet, about the size of a grape. Garnet minerals have crystals that are twelve sided and remind me of small soccer balls. The label that had accompanied this specimen on exhibit read "Garnet, variety Spessartine. From Shelburne, Shelburne County." The label also had a small map of Nova Scotia with a red arrow pointing to the location. That was all the information that had been with the specimen on exhibit.

Critical information about museum specimens is kept in museum records. Historically, these records were stored in large ledger books that recorded the details of where specimens were from, who provided them to the museum and when, as well as the specific features and history of the specimen. Today, curatorial staff maintain this data in a digital database. The data about specimens is organized and connected to the specimen via a unique museum number. The number

is physically attached to a specimen, and connects all the relevant information with the object.

The particular garnet I was putting away is Nova Scotia Museum number 967GM201.36 (Fig 1). The number was written on the garnet and also written on the back of the exhibit label that was on public display. When I looked up the number in the Museum database, the digital record was not very complete. The collector and date fields were empty, but the database did say the specimen was normally stored in drawer #5 of cabinet #17. I checked that drawer and found the empty tray where the specimen had been stored, and it had another small label with the specimen number and basic information about Shelburne. Based on the structure of the number, I knew that this specimen number had been assigned by a museum curator in 1967. However, a specimen can get renumbered and re-catalogued. Some of the collections in the Nova Scotia Museum date back to the 1850s or older, and they may have been assigned several different types of numbers over the years.

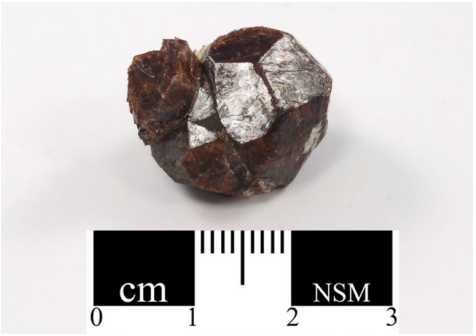

Fig 1 A new museum collections photograph of the garnet specimen 967GM201.36.

I looked at other specimens in the drawer, many were interesting and beautiful, but I noticed one particular rock sample labelled Aplite, that contained much smaller garnets but of similar colour, and this Aplite rock sample was also from Shelburne. I looked up the Aplite rock sample in the database and found it had been originally given the number 2819 by an earlier curator, Harry Piers, in 1905. Harry Piers kept excellent records of museum specimens, each carefully recorded in an accessions ledger. Looking at Harry Piers' ledger for

Fig 2 **The garnet specimen now associated with its aplite matrix (left), next to three pieces of aplite with smaller garnet samples (right).**

the smaller garnets, I found a series of eighteen geology samples that had been donated by Thomas V. Hill. One of these specimens, #2821, was listed as "Garnet in Aplite".

I again examined the Aplite sample with numerous tiny garnets, and found there were three pieces of rock that clearly fit together, as if the rock sample had been dropped and broken at sometime in the past (Fig 2). There was a fourth piece, clearly similar, but I could not find any way to connect it to the other three. Then I took this fourth piece of Aplite and found that the large garnet specimen clearly fit onto one of its surfaces. Thus, the fourth aplite piece belonged with the large garnet, but it had been stored and numbered with the tiny garnet samples. As a result of this research, I was able to conclude that the large garnet was one that had been donated by Thomas V. Hill in 1905.

The Museum records include everything we know about specimens and also information on the people associated with them. However, the only information available about Thomas V. Hill was that Harry Piers had written his name as the donor in the ledger. This led me to ask: who was Thomas V. Hill?

THOMAS VARDY HILL

Today, access to digital archives has revolutionized ability to do research on people. Records can be accessed faster, more easily, and from wider sources than ever before. However, it is still important to know where to look. The Nova Scotian Institute of Science (NSIS) formed in 1862 and has had an important relationship with the Nova

Scotia Museum of Natural History ever since the museum was established in 1868. Searching the digital archives of NSIS, we find "T. Vardy Hill" gave a presentation to NSIS in December 1903, entitled "*The Creation and Development of the Inorganic Foundation of the Earth*" (Secretary NSIS 1906).

The Census for 1901 lists Thomas Vardy Hill, age 63 years, living in Halifax. However, his obituary from 1923 conveys the fullest breadth of his interesting life.

> **"Thomas Vardy Hill**
> There passed away on Saturday at 136 Edward Street, and after an illness of but one day, Thomas Vardy Hill, who was born eighty-six years ago in Sheffield, England, and came of fine old Sheffield stock. For a number of years he was connected with a number of business houses in that place, including that of Samuel Plimsoll. He was also a member of staff connected with the adjustment of claims when the Sheffield Water Works broke their dam, causing much damage to property. Mr. Hill was a close friend of Charles Green, a well known Sheffield artist, of the last generation, and he had himself a keen appreciation of real art. He was master of a facile pen, and contributed to one of the leading Sheffield papers a series of articles on "Rambling in and about Sheffield" which were admirable and the subject of much comment by a wide circle of readers, describing a racy style yet with intimate knowledge the scenery, antiquities and artistic attractions about the Peak district, and within some thirty miles of his native town, with every foot of which and every tradition connected with which he was perfectly familiar. Interspersed were artistic reflections on small matters which would escape the notice of most observers.
>
> He came to Halifax about 1886 and was for a time employed as a nurse at the Victoria General, where he practiced massage, being probably the first to practice it in Halifax. He was a keen observer and had a large fund of accurate information regarding places, people and industries of various kinds; was a great walker, and for some years made a close study of the geology of the district immediately about Halifax, and as an amateur became quite a local authority on the subject. He also took an interest in "local antiquities" and prepared a card index of all the gravestone in

> St. Paul's cemetery, and the cemetery of the Old Dutch Church, a work which took considerable time.
>
> In disposition he was most genial and kindly, unfailingly cheerful, and most active for his years – a characteristic which he retained up to the very day of his death. He is survived by his widow, for whom deep sympathy is expressed, and a number of children, one of the sons being Henry Hill, traveller for the Sherwin Williams Company. A few years ago, Mr. and Mrs. Hill celebrated most auspiciously their golden wedding anniversary on which occasion friends vied with one another in expressions of good will."
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> (*Evening Mail*, Monday Jan 22, 1923, p. 16)

With this description of Thomas Vardy Hill's life, the eighteen geology samples that were donated to the museum now carry additional value. These specimens represent significant items that were collected and studied by this 'amateur' who had attained recognition for his knowledge of local geology. Thomas Hill was clearly an innovative individual, trained as nurse and being the first to practice Massage in Halifax. He was a polymath being interested in art, an accomplished writer, and documented records in Halifax's historic cemeteries.

In his early years, Thomas was a "member of staff connected with adjustment of claims" when the Sheffield Water Works dam broke, on March 11, 1864. This was an event of significance to the history of civil engineering. When the dam broke, over 250 people died and more than 500 houses were lost. Thomas Hill would have had exposure and dealings with many of the families and communities affected by the tragedy. The impact of these social interactions and his knowledge related to the dam's failure related to local geology, would surely have remained with him throughout his life.

BACK TO THE STONES

Garnets can be beautiful and gemstone-quality minerals. Today, we know that geologically, garnets can form in igneous and metamorphic rocks. In metamorphic rocks such as aluminum-rich sedimentary rocks (eg. shales) exposed to increased heat and pressure, mineral

bonds break and reform. In modern geology, garnets are used by geologists to document the depth and temperature that geological formations have been exposed to throughout geological time.

When we look at the specimen of spessartine garnet that was on display, what is more important – being an example of a mineral with a specific shape and chemical formula, or the history of the person who found and studied it; and the contributions that person has made to Nova Scotia society? Do we value this particular garnet more, now that we know it was collected by Thomas Vardy Hill and kept in the museum collection for the past 120 years?

CONCLUSION

With a geoheritage view, we can see that this specific garnet specimen has increased value because of the history of who collected it and what it has represented through time. This specimen is not just a crystal shape and chemical formula. It is not just a geology data point that identifies ancient geological processes of metamorphism and continent building. This specimen provides a connection to a rich heritage of geological inquiry, of amateur contributions and important lessons from history of civil engineering. It is more than just a specimen of a garnet, it is an important part of our geoheritage. The specimen connects us all to knowledge of contributions that citizens like Thomas Vardy Hill have made to the culture of Nova Scotia.

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