

# The Mineral Minutes

## Zoom Meetings Continue

Please connect to our May program at our usual time and date: **Wednesday, May 5, 2021 at 7:30 pm Eastern Time.** You should receive an invitation via email from the MSDC Treasurer, John Weidner. If you do not, please email John (jfwidner42@gmail.com) and he will send you the link.

## May 5, 2021 Program Info: “Gemstones of Ancient Egypt” by Derek Yoost

by Yury Kalish, MSDC Vice President

Our speaker in May will be Derek Yoost, a well-known presenter for mineralogical clubs in New Jersey and New York. With the advent of the pandemic, Derek was one of the generous individuals who answered the call of the Eastern Federation for speakers available to make a presentation to other clubs remotely. Derek is a member of the Advisory Council of the Sterling Hill Mining Museum. Two of Derek’s main areas of interest are fossils and meteorites, but his expertise is much broader, as evidenced by his presentation to our club.

Derek’s presentation is entitled “The Gemstones of Ancient Egypt.” The Egyptian civilization lasted for approximately



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3000 years. Its culture had a profound effect on the Western World through advances in writing, agriculture, and trade. At its height, ancient Egypt was a hub of trading between all corners of the known world. Gems and minerals played a significant role in Egyptian culture, including religion, jewelry, cosmetics, and medicine.

Above all, the Egyptians valued gold, but there were other minerals that the Egyptians used to craft their wares, ornaments, and jewelry. Lapis lazuli, turquoise, amethyst, garnet, and chalcedony are just some of the gems valued for their beauty. In his lecture, Derek will explore where these minerals were mined, how they were traded, and what utility they had for the ancient Egyptians.



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Pectoral of Princess Sithathoryunet of gold, inlaid with turquoise, lapis lazuli, carnelian, garnet from Egypt, Twelfth Dynasty, reign of Senwosret II (c. 1887–1878 B.C.)

Source of photo: [thejewelryloupe.com](http://thejewelryloupe.com)

## Prez Says...

by Dave Hennessey, MSDC President

I was born in the city of Washington, DC. My parents lived in Arlington, VA, but in 1952 the suburbs did not yet have much in the way of hospitals. So when I decided to make my entrance, it was at Sibley Memorial Hospital. Not Sibley Memorial Hospital at its current location, but an earlier iteration that has since been torn down. I feel lucky to have been born here. Washington DC is a remarkable city. It has everything. Colleges and universities, the Kennedy Center and other cultural resources, restaurants, theaters, professional sports teams, arboretums, parks, national monuments, and world class private and public museums. Though I live in the suburbs, I frequently enjoy trips into the city to enjoy all of the above. One of my favorite pastimes is visiting various parts of the Smithsonian Institution.



According to its website, “The Smithsonian Institution is the world’s largest museum, education and research complex, with 19 museums and the National Zoological Park.” The Mineralogical Society of the District of Columbia (MSDC) has been associated with the Smithsonian Institution’s National Museum of Natural History (NMNH) since the club’s beginning more than 75 years ago. It has been our privilege over the years to have members of the NMNH Mineral Sciences Department as club officers, members, speakers and sponsors. The Smithsonian Institution’s museums have been closed for some time now but the Smithsonian has announced that they are beginning to reopen.

Nine of the museums will reopen on various dates through the month of May. Unfortunately, the NMNH is not one of the museums being reopened in this first wave. However, the Smithsonian has indicated that the reopening of additional museums will be coming in the following months. I am hopeful that after our summer hiatus (the club does not meet in July and August) the NMNH will have reopened and we will be able to again meet in the Cathy Kirby room. Keep your fingers crossed.

This month’s presentation is of particular interest to me. My wife and I scheduled a trip to Egypt with a company called Overseas Adventure Travel with whom we have traveled twice before. The trip is actually pretty far in the future, late December 2022. Hopefully, this month’s presentation will give me some ideas of what to look for when we make this trip.

## Sharing Time

In keeping with our presentation this month, please review your collections for minerals from Egypt and the surrounding middle eastern region to share with the club. As always, we will enjoy seeing any mineral you wish to share with the group, middle eastern or not. If you find it interesting, we will enjoy seeing and hearing about it.

## April 2021 Business Meeting

by Andy Thompson, MSDC Secretary

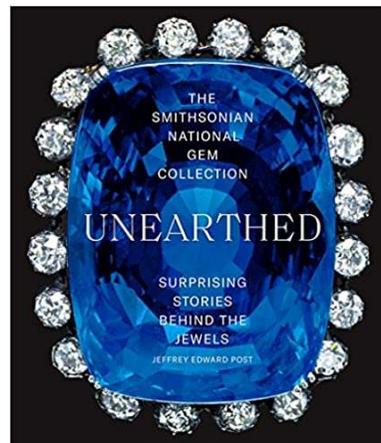
President Dave Hennessey thanked everyone for coming to the meeting and warmly welcomed five first-time attendees, including Quintin, Willow, Teddi, Chanelle, and Paula. These “first-timers” were asked to briefly share what particular interest they have in minerals or how they heard about MSDC’s Zoom meetings. MSDC members always find this information interesting and helpful.

Dave then asked if members had any changes needed in the March Business Meeting Summary published in the April newsletter. With none proposed, members then motioned, seconded, and approved the acceptance of the March summary as published.

**Finances:** The Treasurer’s report indicated the club had no expenses during the past month, had 24 paid membership units, and continued to enjoy being fiscally solvent.

**Old and New Business:** Members had no old business issues to discuss, but members noted several new business items which included:

- The recent publication of Dr. Jeff Post’s “*Unearthed: Surprising Stories Behind the Jewels.*”
- The April symposium for the Micromineralogists of the National Capital Area and the Rochester Mineralogical Symposium.
- Dave and Leslie Nanney’s invitation to visit their azalea garden in Springfield, VA during the next two months. Dave recommends that retired folks visit on weekdays, with weekends to be reserved for working folks. If interested, contact Dave for directions and parking information: [dnanney@cox.net](mailto:dnanney@cox.net).
- Discussion about when the Smithsonian will reopen to the public.



The Smithsonian’s Tim Rose and Smithsonian volunteers all responded that the question is being discussed at the highest levels and that some Smithsonian facilities are scheduled to open, but to date, no firm decision has been made about when Natural History Museum will reopen.



- Discussion of a recent Washington Post article about the historic 18th and 19th century quarry site that was the source of Aquia sandstone used to provide building blocks for the White House and the older portions of the Capitol and Treasury buildings.

The quarry is located in a Stafford County, VA park known as Government Island, located 40 miles south of DC on a peninsula bordered by Aquia Creek. Also mentioned were the remnants of discarded building blocks dumped near the horse stables in Rock Creek Park near Military Road and Oregon Avenue in northwest DC.

With no further business items needing discussion, Dave called for and received a motion and unanimous vote to close the business meeting. Dave turned the meeting over to Yury, MSDC’s Vice President for Programs, to introduce the evening’s presenter.



Geology holds the keys of one of the kingdoms of nature; and it cannot be said that a science which extends our Knowledge, and by consequence our Power, over a third part of nature, holds a low place among intellectual employments.

– **William Buckland (1820)**

Source: “*Vindiciæ Geologicæ: The Connexion of Geology with Religion, Explained in an Inaugural Lecture Delivered Before University of Oxford, May 15, 1819, on the Endowment of Readership in Geology*”, p.7

# MSDC April 7th Program: “The Minerals of Cornwall” Presented by Dr. Martin Held

Synopsis by Andy Thompson, MSDC Secretary

Dr. Martin Held is a life-long mineral enthusiast whose interests, in the time before Covid-19, allowed Martin and his wife to visit collecting sites and mineral museums throughout the U.S., Europe, and beyond. Martin, who is President of the Cleveland Micromineral Society, shared with his MSDC Zoom audience that the evening’s presentation was inspired by the Covid-19 quarantine.

Because the pandemic made it difficult to travel and he was necessarily staying home, Martin thought it would be a fine time to research the minerals and mines of Cornwall by using books and the internet. He found the recent publication *Cornwall/UK: Geology and Minerals, extraLapis 57* particularly helpful, along with several other relevant resources, which helped him pull together a PowerPoint presentation on the minerals and mining region of Cornwall. For those not familiar with Cornwall, it is the most southwestern tip of England, shown in red in the image below.



## Why Focus on Cornwall?

Cornwall County was an attractive site to explore because, Martin noted, historically it had been the major supplier of the world’s tin and copper and essentially fueled the bronze age throughout the Mediterranean region. Even in more recent times, the region has been the source for hundreds of mineral species.

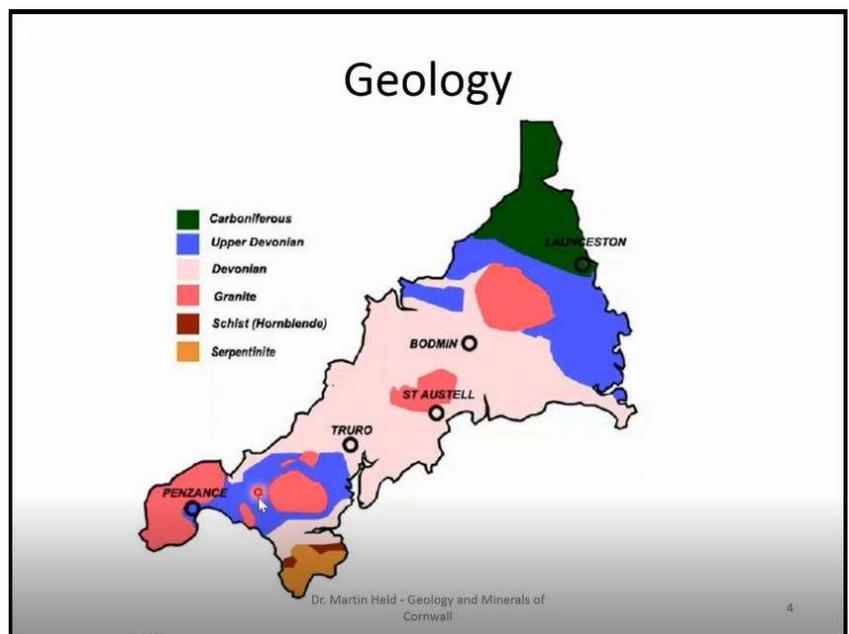
Cornwall is one of the oldest mining areas and mineral localities in the world with records dating back to 2150 BC. Its mines, along with several in the neighboring county of Devon, are now part of a UNESCO World Heritage site called The Cornwall and West Devon Mining Landscape. Mining started in Cornwall in the Bronze Age with alluvial ore deposits of cassiterite, a major source of tin, followed by lead and copper. Tin, when mixed with copper, of course, creates bronze. For centuries before the Christian era, Cornwall was the main source of tin which supplied the Greek, Roman, Egyptian, and near eastern makers of bronze age tools, weapons and jewelry.

Martin’s presentation featured five aspects: the region’s geology, occurrence of metals, history, mining, and minerals, in that order.

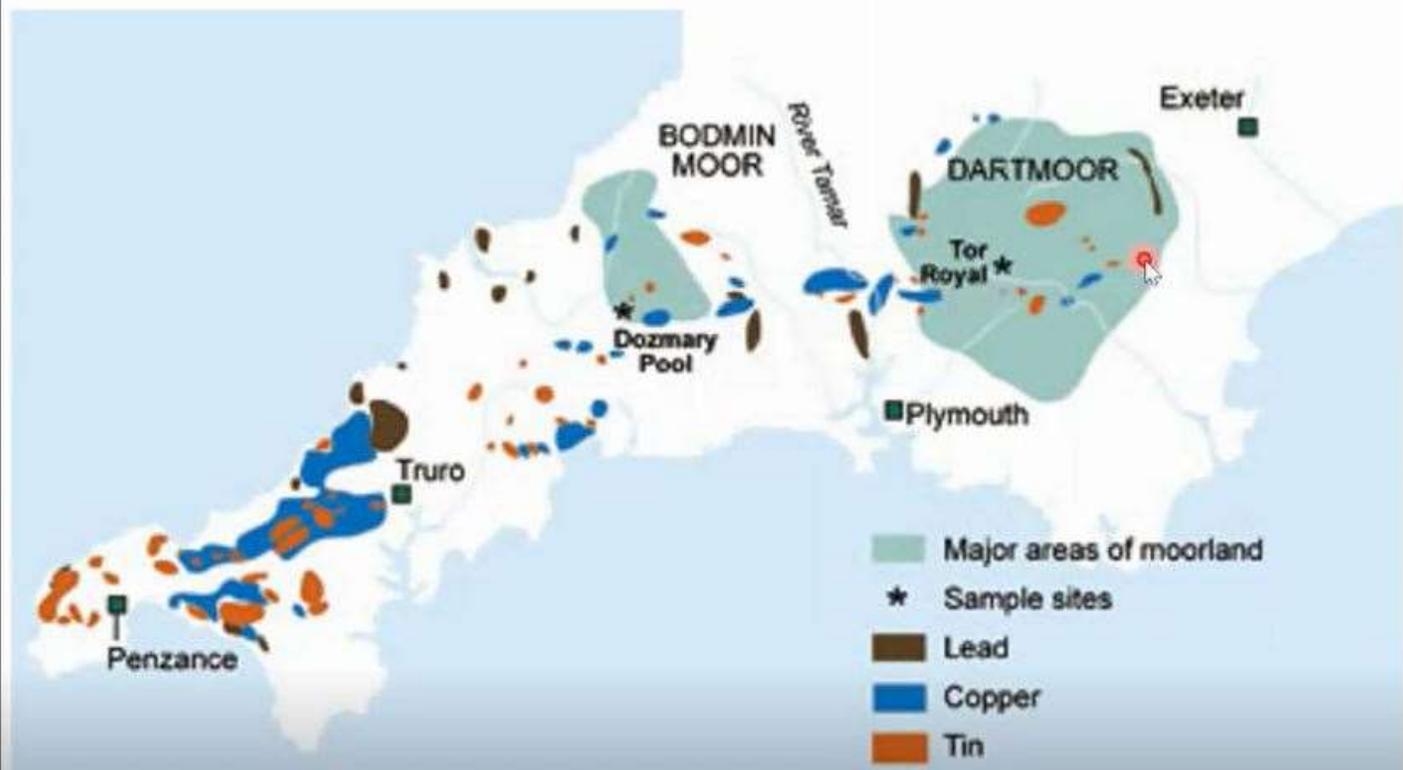
## The Geology of Cornwall

Martin explained that the U.K.’s most southwestern peninsula contains a diversity of six types of ore, ranging from the coal-laden carboniferous region to the north in Devon to the metals-laden schist and granite formations near Penzance in the south.

For several thousand years miners worked the extensive lead, copper, and tin deposits on the southwestern peninsula of England, as indicated in the map of Cornwall and Devon below.



# Occurrence of metals



Dr. Martin Held - Geology and Minerals of Cornwall

## A Four Thousand Year History of Mining

Mining in Cornwall and Devon, in the southwest of England, began in the early Bronze Age (around 2150 BC, and ended (at least temporarily) with the closure of the South Crofty tin mine in Cornwall in 1998. Tin, and later copper, were the most commonly extracted metals. Some tin mining continued long after the mining of other metals had become unprofitable.

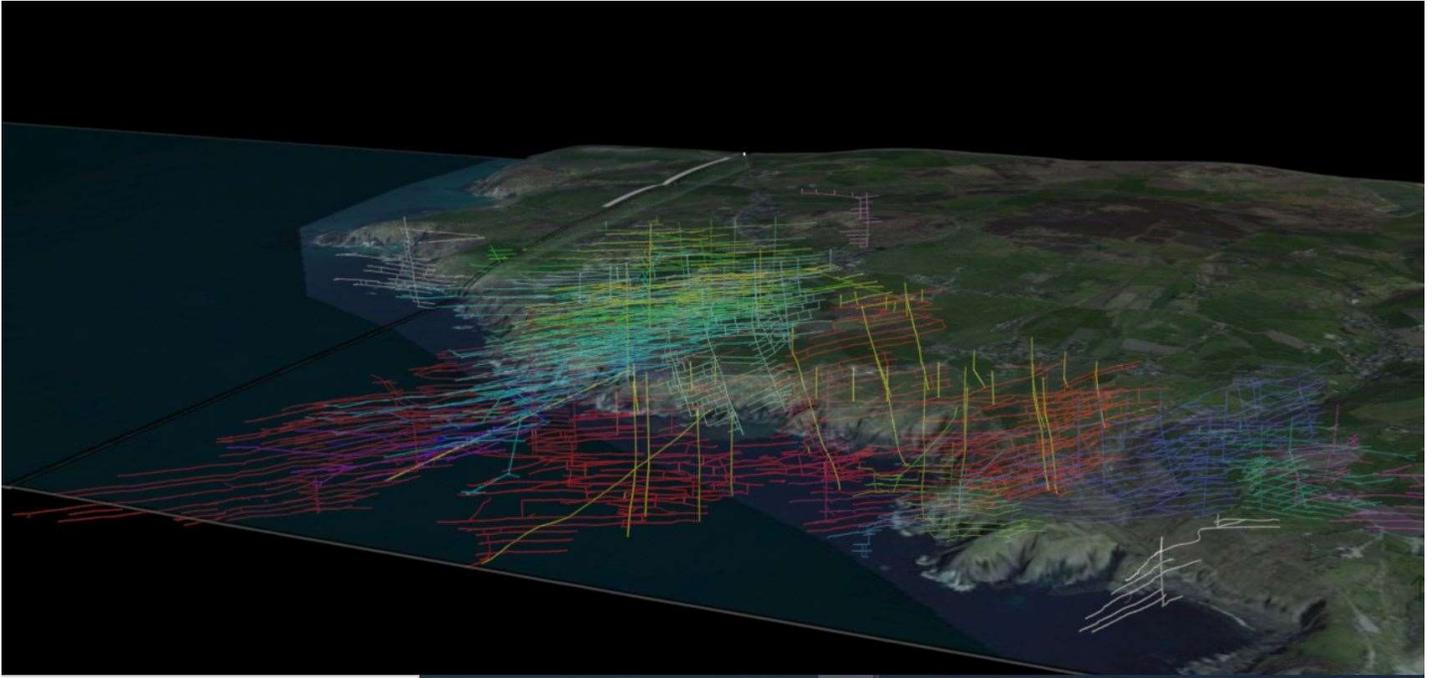


## The Mines of Cornwall

Today, what remains visible on the surface are skeletal remains of the mines' engine houses which protected the mines' entrances, through which metals and water were extracted from the tunnels below.

Thanks to advances in imaging technology, researchers have constructed a 3-D portrait of the extensive network of now abandoned underground tunnels. *As indicated by the red and blue lines to the lower left of the image below, the Cornwall tin mine tunnels extend out for more than a mile underneath the Atlantic Ocean.*

## Three-D portrait of Cornwall Mines



A link to this and additional 3-D images can be found at: <https://abandonedminemodels.com/cornwall>  
One of the 3-D images is actually a video which illustrates the locations and many hundreds of mine systems throughout the region.

## The Minerals of Cornwall and Devon Counties

Geologists and mineral collectors have found in excess of 500 different minerals, including 40 for which Cornwall or Devon are the type locality, such as cornwallite, which the geological community associates primarily with this peninsula's region. Others include botallackite, bournonite, licronite, ludlamite, vivianite, olivenite, and fluorapatite.

Martin treated his audience to portions of two short YouTube videos which gave an overview and "in-depth" tour of several of the mines, including the Botallack Mine. They included interviews with geologists and historians explaining the important role tin played in enabling the manufacturing of bronze from as early as three millennia ago which led to a technological revolution affecting manufacturing and the transition out of the limitations of the stone age.

### To Learn More:

Readers wishing to see the full-length version of the videos referenced here (or related YouTube videos about Cornwall mining) can do an internet search for phrases such as: "history Botallack mine Cornwall England" or "BBC video Cornwall bronze sword making" to find *dozens* of related videos.



Martin's second video provided a first-hand demonstration of how a skilled individual metal worker smelts copper and tin to produce a bronze sword. By making a super-heated mix of 90% copper (for flexibility) and 10% tin (for hardness), and pouring the melted mélange into a stone mold, the worker quickly formed a sword blade, shown at left, that holds a sharp edge and can withstand the blows of combat without cracking or sustaining damage.

Mineral collectors in the Cornwall and Devon mining regions have found rare examples of many specimens. One example, shown below, is the surprisingly large, four-inch-wide tourmaline found two centuries ago by a farmer plowing his field in Devon County.

Martin showed photos of excellent specimens of each of the three historically main metals mined in the Cornwall and Devon regions: tin, copper and lead, as well as several other minerals. His mineral display started with cassiterite shown below, the main source of tin for the region's three-thousand-year history of mining. It also has multiple forms of crystallization, including the "needle tin" found elsewhere, such as in Germany, as shown below.

### Tourmaline find 1815 – 1820, Wooley Farm



Exceptional British schorl crystals (to 4 inches across) were found in a pegmatitic cavity a year or two before 1817. Specimens from this occurrence occasionally surface from old collections and may be labelled Chudleigh or Bovey Tracey as well as Wooley Farm.

The occurrence was a pegmatitic cavity in the Dartmoor granite which was uncovered by ploughing. At the time of the find the size and perfection of the schorl crystals was outstanding by world standards. Some of the original schorl-bearing material was utilised by the farmer, Mr. Ellis, to build a wall. Disliking its "magpie" appearance Ellis had the wall whitewashed.

Photo: Ian Jones

Crystal 45 mm

### Minerals – classic ore



Cassiterite, Cornwall  
Photo: John Betts



Nadelzinn = 'needle tin'  
Dolcoath Mine, St. Day, 9 mm  
Photo: Extra Lapis # 57

Dr. Martin Held - Geology and Minerals of Cornwall

Although tin was the primary export from the peninsula, copper was also extensively mined. Records for its production starting with the late 1700s indicate a little over 2000 tons were produced annually, which number grew to almost 6,000 ton in the first decade of the 1800s. That productivity increased to 40,000 ton annually throughout the first half of that century. By the 1850s, however, less expensively mined copper deposits were discovered in the U.S. and Mexico which in effect put the U.K. copper mines out of business.

Half a century later, in the early years of the 20th century, the U.K. mining industry discovered extensive deposits of tungsten and, to a lesser extent of arsenic, which then for a few years became a new major source of exports until, again, less expensive sources were

discovered outside the U.K. and the mining of tungsten, as with copper mining, also ceased. Martin also provided images of picturesque forms of cassiterite specimens known as "toad's eye" and "wood tin".

While the mining of copper was in full swing, there was also some mining of lead (Pb), as indicated in the fourth slide showed above, the "Occurrence of metals" slide. It shows in dark brown, several major areas of lead mining such as near Dozmary Pool in Cornwall and Truro in Devon.

Earlier in Martin's presentation, he referred to the Cornwall and Devon region as having more than 500 different mineral specimens, of which 40 were type minerals, specific to the region. Now, for his concluding segment, Martin showed MSDC members and guests pictures of a wide range of additional interesting secondary specimens. Most were beautiful micro-mounts, including exceptional specimens of chalcocite,

### Minerals – copper



Spinel twin, Relistian Mine, 4 cm  
Photo: Timothy Sherburn



Cornwall, copper cubes, 9 mm  
Photo: Beth Schaefer

Dr. Martin Held - Geology and Minerals of Cornwall

## Minerals – ores, Pb



Blaubleierz, Wheal Hope, St. Agnes  
Photo: Weinrich Minerals



Jamesonite, Treore Mine  
Photo: David K. Joyce

Dr. Martin Held - Geology and Minerals of Cornwall

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chalcopyrite, cuprite, bournonite, chalcocite, chenevixite, clinoclase, and kernowite. Images of all these and more specimens are included in the recorded video of Martin's presentation.

### Questions from Participants

Dave Hennessey, MSDC's President, thanked Martin for his excellent, interesting presentation on the minerals and mines of Cornwall and Devon. The attendees' applause indicated their enthusiastic concurrence with Dave's appreciation. He then invited questions for Martin from participants.

One question concerned the slide showing liroconite, which includes elements of copper, aluminum and arsenic. Several MSDC members (Kathy, Mike and Dave H) were very familiar with the mineral and raised a question about its natural color. In Martin's slides, one example the liroconite was light green and in another it was a deep blue.

One suggestion was that any greenish tint may be a sign of the presence of a shift in the proportion of copper over that of other elements. Martin suggested that another factor could be that sometimes a Zoom presentation can shift the colors of the specimens.

Jeff raised a question about the 50-year gap, after 1850, in the quantity of the mined copper: was the vein simply exhausted? Martin explained that although some quantity of copper ore was still available, the newly opened mines in the U.S. and Mexico offered lower production costs, making the Cornwall mines noncompetitive. After half a century, when the worldwide price of copper rose, the Cornwall copper mining operation resumed for a short period.

There was discussion about the subtle changes in some specimens, when, for example, the amount of iron increases in a previously predominantly copper mineral, and then a new mineral is named. Brian asked how that new mineral naming is determined. Martin explained that the new mineral is researched and analyzed by several techniques, including X-ray diffraction. An official committee then rules on the decision, and if warranted, a new name is assigned to the mineral.

Another question was about the meaning of the word "Wheal" which occurred several times associated with mining operations throughout Cornwall and Devon. Martin said it simply means "mine" and was commonly used in identifying the various mining operations.

## Minerals – Wheal Gorland TL



Cornwallite, 6 mm  
 $Cu_5(AsO_4)_2(OH)_4$

Photo: Steve Rust



Liroconite, 2.2 mm  
 $Cu_2Al(AsO_4)(OH)_4 \cdot 4H_2O$

Photo: Stephan Wolfsried

Dr. Martin Held - Geology and Minerals of Cornwall

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## Mineral Show and Tell

Dave H again thanked Martin for his presentation and responses to questions. Dave then invited attendees to share any minerals they wanted to show the group, including, when available, a photograph of the specimen.

Susan provided the following photo of a **libethenite** specimen which came from Linkinhorne in Cornwall. It was mined prior to 1920 (Museum Regni Bohemia label cca. 1920)."

Dave N shared several Cornwall-related minerals and hematite also from the British Isles. Geologist Tim Rose, MSDC's sponsor within the National Museum of Natural History, also contributed to the conversation.

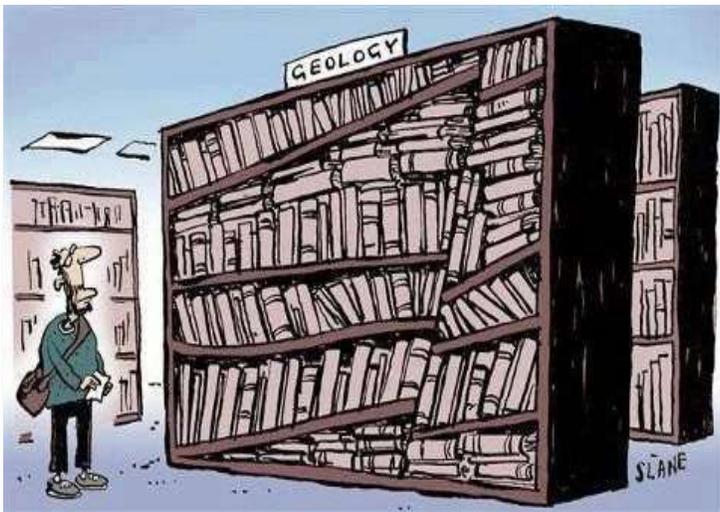
Ken Rock, editor of MSDC's Mineral Minutes, encouraged all who shared their mineral specimens with the group to take a photo of their specimen(s) and send them to him for incorporation in the newsletter's report of the meeting. He also encourages readers to provide input to the newsletter by sending articles or items of interest directly to him at [kennethrock@gmail.com](mailto:kennethrock@gmail.com).



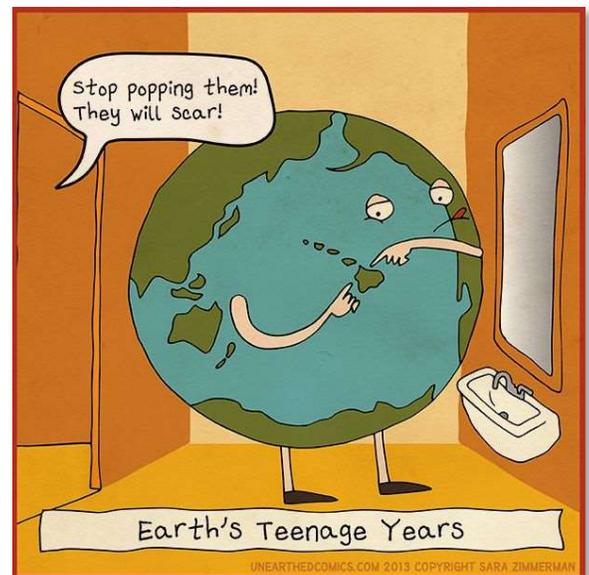
Libethenite, Wheal Phoenix, Linkinhorne Parish, Liskeard Township, Cornwall, England, UK. Specimen is 9.5 x 3.5 x 7 cm with 2 mm spheres of green libethenite

Dave Hennessey thanked everyone for participating in the April meeting and said he looked forward to seeing everyone again for the May 5th meeting when Derek Yoost will talk about the gemstones of ancient Egypt.

## Humor Section



Shows that no library shelving system is without its faults!



"All Gaul is divided into three parts: igneous, sedimentary and metamorphic."

– *Geologist Wilson Hinckley (1928 - 1972)*

## Red Beryl from the Wah Wah Mountains of Southern Utah

By Ken Rock, MSDC Newsletter Editor

Historical information is used, with permission, from Gem-Hub: [<https://gem-a.com/gemhub>], Gemmological Association of Great Britain. From "American Gemstones: Red Beryl from Utah," July 2020.



The exceedingly rare red beryl found in the Wah Wah Mountains of southern Utah came about due to unique geological circumstances. Other examples of unique geologic environments associated with minerals include the volcanic fluids in the Andes Mountains that reacted with thick layers of black shale to create the unique

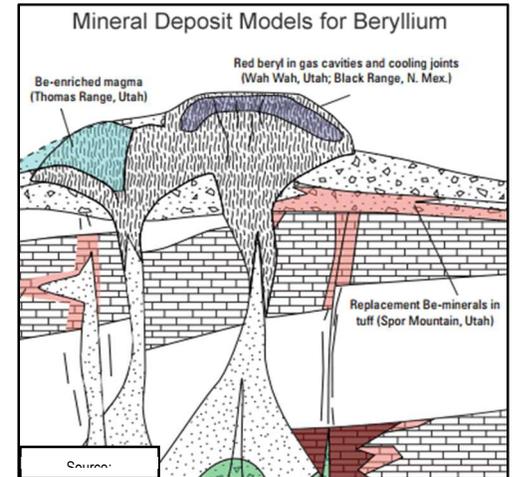


and vivid emeralds of Columbia, and the barium- and titanium-rich fluids that led to the formation of benitoite, California's state gemstone.

### Geology

Red beryl formation began with the eruption of a rhyolite lava from volcanic vents about 18 to 20 million years ago. As the lava began to cool, shrinkage cracks formed, creating pathways for high temperature gases rich in beryllium to escape. Surface water also began to seep into these cracks and mixed with the rising beryllium gases from the magma chamber below. The superheated water and gases from below reacted with the cooler surface water containing silica, aluminum, and iron and manganese oxides leached from the lava to form red beryl crystals within the fractures and cavities of the rhyolite. The bright red hue comes from manganese that is typically not present in most beryl crystals.

### Discovery



Many mineral discoveries in the US were made by those in search of the 'mother lode,' but instead miners found themselves looking at something totally new and unexpected. Red beryl fit that description!

Like many other gemstone species, red beryl was discovered mostly by chance. Maynard Bixby was a bookkeeper turned prospector who traveled to Utah after trying his hand at mining in Colorado and Arizona. To look for topaz, he staked several claims in a remote part of the Thomas Range of Utah, but at one of his claims, he found the first red beryl crystals in 1904. He sent a sample to the National Museum in Washington, DC where it was formally identified as a new variety of beryl.

In 1958, a second occurrence of red beryl was discovered by Lamar Hodges in the Wah Wah Mountains in Utah, about 90 miles south of the original find. He was unsuccessfully prospecting for uranium ore when he unearthed gem quality red beryl crystals. He staked the Violet claim and, as a hobby, worked the claims with his family for 18 years. The rights to mine the property were purchased by the Harris family in 1978. They staked 12 claims called Ruby 1-4 and Violet 1-8. These claims became the Ruby Violet Mine.

In 1994, the Kennecott Exploration Company (KEC) signed a three-year lease with the Harris family with an option to buy the mine. The company wanted to see if larger-scale mining of red beryl was feasible. KEC took numerous core samples and tunneled into the deposits, removing 11,000 tons of rock. The company estimated the yield of the ore deposits at 1.2 carats of red beryl per ton of ore with only a 10% yield during faceting. This means that the mine was estimated to produce .125 carats of faceted red beryl per ton of ore. Even though its explorations were considered a success, the company downsized in 1996 and decided to let the mine go back to the Harris family.



Figure 2. Early work consisted of blasting, pick, shovel and wheelbarrow work.

The company estimated the yield of the ore deposits at 1.2 carats of red beryl per ton of ore with only a 10% yield during faceting. This means that the mine was estimated to produce .125 carats of faceted red beryl per ton of ore. Even though its explorations were considered a success, the company downsized in 1996 and decided to let the mine go back to the Harris family.

### Important Localities for Red Beryl

Red beryl has been produced by only seven locations, the majority of those are in Utah. The only other country to produce red beryl besides the US is Mexico. Other beryl varieties are quite common around the world and typically form in granitic pegmatites and some metamorphic rocks.

***Red beryl is different. All the known occurrences of red beryl have been found in one unlikely host rock: rhyolite.*** Most geological studies on red beryl have been conducted at the Ruby Violet Mine in the Wah Wah Mountains because it is the only location that has produced facet grade material in any kind of quantity.

### Gemstone Info

Red beryl is a beautiful and truly unique gemstone produced in the U.S. It also is difficult to mine due to its small geographic distribution and low yield. Cut gemstones are mostly small (<1 carat) and, depending on color, can be quite costly. For example, check out these gemstones on eBay (if not already sold): [1.58 ct](#) faceted stone; and a [0.55 ct](#) faceted stone.



This cluster of crystals is one of the finest examples of red beryl. It measures 6x2.7x2.6 cm and was collected from the Harris Claim. Specimen and photo by Arkenstone [www.iRocks.com](http://www.iRocks.com)



Like its beryl cousin, emerald, red beryl is often found with inclusions and fractures. When used in jewelry, these stones are often impregnated with resin to fill fractures, stabilize the gem, and improve durability and appearance. Similar treatments are regularly done to emerald and are acceptable if disclosed to buyers.

### Author's Note

Many years ago, during my move from California to Washington, DC, I stopped at a restaurant in southern Utah and met a fascinating character who had quite an interesting story to share. The meeting came about because while waiting to be seated, I noticed near the cash register several magazine clips that grabbed my attention. The articles described a red beryl deposit in the nearby mountains. Needless to say, I asked about it and was told that the red beryl is mined nearby and that the owner of the mine comes in nearly every day for breakfast.

As luck would have it, Rex Harris came in as I was finishing my meal. I don't know if the waitress had told him that there was a rock collector in the place, but Rex told me that he was the owner of the mine. He seemed pleased to have the opportunity to tell me more about this unusual mineral and the fact that it is mined only in one place – the nearby Ruby-Violet claims. I asked about the amazing crystals on a ring and in a necklace he was wearing and Rex said that these items show off some of the finest crystals he has found. He mentioned that he often sells

the items directly from his attire to a customer who “just has to have it.” I visited Rex’s shop and purchased a small red beryl crystal in matrix as a memento of my visit.

I subsequently ran into Rex a couple of times at the Tucson gem & mineral shows over the years and learned that he had sold the mine to a Japanese entity and was trying to liquidate some of his remaining inventory. Red beryl remains a beautiful and truly unique gemstone that will always be associated with Rex Harris. Rex has now passed away, but his legacy lives on.



### Red Beryl Information Sources

- [1] [What Gemstone is Found in Utah That is Rarer Than Diamond and More Valuable Than Gold?](#), by Carl Ege, article published on the website of the Utah Geological Survey, accessed in January 2016.
- [2] [Red Beryl from Utah: A Review and Update](#), by James E. Shigley, Timothy J. Thompson and Jeffrey D. Keith, *Gems & Gemology*, Winter 2003, pages 302-313.
- [3] [Red Beryl](#): Stinson's Gemcutting, information page on the company website, accessed in January 2016.
- [4] [Occurrence Model for Volcanogenic Beryllium Deposits](#) by Nora K. Foley, Albert H. Hofstra, David A. Lindsey, Robert R. Seal, II, Brian Jaskula, and Nadine M. Piatak, Chapter F of *Mineral Deposit Models for Resource Assessment*, Scientific Investigations Report 2010-5070-F, United States Geological Survey, 43 pages, 2012.

***Dues Reminder!***

## Please Support MSDC by Joining the Club!

If you’ve been meaning to join the club and have not yet done so, please be assured that it’s not too late! Individuals wishing to join or renew should complete the membership form on page 16 of this newsletter and send their \$20 check to John Weidner at the address shown on the form. Please also consider a family membership for only \$5 more (\$25 for family membership).

## MSDC Club Information

**Due to COVID-19, our meetings will be virtual over Zoom. No in-person meetings are planned until further notice.** In non-COVID times, meetings are the First Wednesday of the Month (Jan-Jun and Sep-Dec). We meet in the Constitution Avenue lobby of the Smithsonian National Museum of Natural History at 7:30 pm.

**Website:** <http://mineralogicalsocietyofdc.org/>

**Facebook:** [www.facebook.com/Mineralogical-SocietyOfTheDistrictOfColumbia](http://www.facebook.com/Mineralogical-SocietyOfTheDistrictOfColumbia)

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## THE MINERAL MINUTES

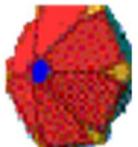


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**NEWSLETTER OF THE MINERALOGICAL SOCIETY OF THE DISTRICT OF COLUMBIA**

Mineralogical Society of DC  
Time Sensitive Dated Material

## Useful Mineral Links

	<p>American Federation of Mineralogical Societies (AFMS)</p>	<p><a href="http://www.amfed.org">www.amfed.org</a></p>
	<p>Eastern Federation of Mineralogical and Lapidary Societies (EFMLS)</p>	<p><a href="http://www.efmls.org">www.efmls.org</a></p>
 <p><a href="http://mindat.org">mindat.org</a></p>	<p>MINDAT</p>	<p><a href="http://www.mindat.org">www.mindat.org</a></p>
	<p>Micromineralogists of the National Capital Area</p>	<p><a href="http://www.dcmicrominerals.org">www.dcmicrominerals.org</a></p>
	<p>Mineralogical Society of America (MSA)</p>	<p><a href="http://www.minoscam.org">www.minoscam.org</a></p>
	<p>Friends of Mineralogy</p>	<p><a href="http://www.friendsofmineralogy.org">www.friendsofmineralogy.org</a></p>
	<p>WebMineral</p>	<p><a href="http://www.webmineral.com">www.webmineral.com</a></p>
	<p>The Geological Society of America (GSA)</p>	<p><a href="http://www.geosociety.org">www.geosociety.org</a></p>
	<p>Jeff Scovil Mineral Photography (not advertising - just great photos)</p>	<p><a href="http://www.scovilphotography.com">www.scovilphotography.com</a></p>
	<p>United States Geological Survey (USGS)</p>	<p><a href="http://www.usgs.gov">www.usgs.gov</a></p>
	<p>The Geological Society of Washington (GSW)</p>	<p><a href="http://www.gswweb.org">www.gswweb.org</a></p>



## AFMS Code of Ethics



-  I will respect both private and public property and will do no collecting on privately owned land without the owner's permission.
-  I will keep informed on all laws, regulations of rules governing collecting on public lands and will observe them.
-  I will to the best of my ability, ascertain the boundary lines of property on which I plan to collect.
-  I will use no firearms or blasting material in collecting areas.
-  I will cause no willful damage to property of any kind – fences, signs, and buildings.
-  I will leave all gates as found.
-  I will build fires in designated or safe places only and will be certain they are completely extinguished before leaving the area.
-  I will discard no burning material – matches, cigarettes, etc.
-  I will fill all excavation holes which may be dangerous to livestock. [Editor's Note/ Observation: I would also include wildlife as well as livestock.]
-  I will not contaminate wells, creeks, or other water supply.
-  I will cause no willful damage to collecting material and will take home only what I can reasonably use.
-  I will practice conservation and undertake to utilize fully and well the materials I have collected and will recycle my surplus for the pleasure and benefit of others.
-  I will support the rockhound project H.E.L.P. (Help Eliminate Litter Please) and will leave all collecting areas devoid of litter, regardless of how found.
-  I will cooperate with field trip leaders and the se in designated authority in all collecting areas.
-  I will report to my club or Federation officers, Bureau of Land Management or other authorities, any deposit of petrified wood or other materials on public lands which should be protected for the enjoyment of future generations for public educational and scientific purposes.
-  I will appreciate and protect our heritage of natural resources.
-  I will observe the "Golden Rule", will use "Good Outdoor Manners" and will at all times conduct myself in a manner which will add to the stature and public "image" of rockhounds everywhere.



# Membership Application or Renewal

## The Mineralogical Society of the District of Columbia (MSDC)

Family – \$25.00 per year. One address.

Individual – \$20.00 per year.

New \*

Renewal dues are for year \_\_\_\_\_ \*

For new members who join in the last months of the year, membership will extend through the following year with no additional dues.

### ANNUAL DUES – PLEASE PAY YOUR DUES PROMPTLY

Please mail to:

**Mineralogical Society of DC  
c/o John Weidner  
7099 Game Lord Drive  
Springfield, VA 22153-1312**

Name(s) (First and Last) \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip: \_\_\_\_\_

Phone(s): Home/Work/Mobile \_\_\_\_\_

Email(s): \_\_\_\_\_

### OK TO INCLUDE YOU ON CLUB MEMBERSHIP LIST?

Yes – Include name, address, phone, email.

If you want any information omitted from the membership list, please note:

Omit my:  Email;  Home phone;  Work phone;  Mobile phone;  Address;  Name

**SPECIAL CLUB-RELATED INTERESTS?** \_\_\_\_\_

**Meeting Dates, Time, and Location:** The first Wednesday of each month; no meeting in July or August.

**(Due to COVID-19, our meetings will be virtual over Zoom. No in-person meetings are planned until further notice.** Normally, the MSDC meetings take place at the National Museum of Natural History, Smithsonian Institution, 10th Street and Constitution Ave, Washington DC. We usually gather at the Constitution Avenue entrance at 7:30 pm to meet our guard who escorts us to the Cathy Kerby Room.)