

The Mineral Minutes

Zoom Meeting in June; No Meeting in July or August

Please connect to our program at our usual time and date: **Wednesday, June 2, 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.

Note that MSDC will be continuing our tradition of not meeting in July or August. We wish all of our members and subscribers a wonderful summer!

June 2, 2021 Program Info: “Michigan Copper” by James Hird

by Yury Kalish, MSDC Vice President

Our speaker in June will be James Hird. Jim got to know Michigan Copper Country while working on his engineering degree at Michigan Technological University (“Michigan Tech”) in Houghton. He spent most of his professional career in West Virginia and is active in the Kanawha Rock and Gem Club out of Charleston, WV. Jim often returns to Northern Michigan to visit his son’s family, collect minerals during Keweenaw Week, and ride snowmobiles. Jim’s life story, in his own words, is published beginning on page 4 of this newsletter.



Jim’s presentation is devoted to Michigan copper and copper minerals. The full title is “The Keweenaw: Its Mines and Minerals, Then and Now.” Keweenaw is a name of the county and peninsula on Lake Superior, at the northern edge of the

Upper Peninsula (“UP”) of Michigan. Copper deposits there were known to, and used by, Native Americans for thousands of years. Modern commercial mining started in the late 18th century (with a full-blown copper boom starting in 1840s), and continued through the 1960s. For that reason, the story of Michigan copper mining is the story of American industrial development.



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Michigan has produced over 14 billion pounds of copper. While most of Michigan copper was from native copper deposits, some of it also came from copper bearing minerals. Jim will discuss geological, mineralogical, and industrial aspects of this important part of American mining history.



Prez Says...

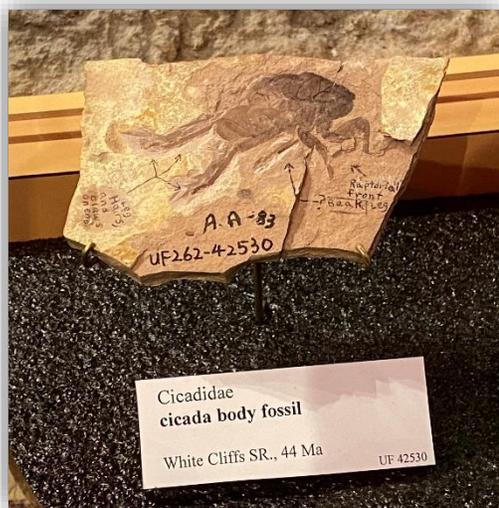
by Dave Hennessey, MSDC President

For the last several days, I have heard the low hum of cicadas when out walking the dog. Before today I had not actually seen any -- only heard them. But today there was one on my driveway. Smaller than I remember, but those big red eyes are just creepy. I understand they won't bite me or eat up the plants in the yard, but they are still just creepy. I know it is going to be getting much worse soon. At this point I've only seen the one, but millions of this guy's buddies will be showing up soon. I actually think it won't be too bad right where I live. My home is less than 17 years old and I'm hoping that the building of homes and roads in my neighborhood 15 years ago may have knocked out a lot of individuals in their infancy.



My most vivid memory of cicadas 17 years ago is actually from the mineral show held at Goucher College in Towson, Maryland. The Goucher College campus has a lot of beautiful old trees and the show itself was held mostly outside in a large open courtyard which also had a number of trees. Dealers, who were mostly just other collectors, paid a small fee for table space around the interior perimeter of the courtyard. It was great: you set up, checked out what others had to offer, and de-accessed things from your own collection, all the while praying that it would not rain since we were out in the open. It didn't rain that year, but with all the old growth trees, the place was absolutely teeming with cicadas who were on the move, flying about, and looking for romance.

Besides the cicadas, I remember that year getting a really nice wire gold specimen from the Olinghouse Mine in Washoe County, Nevada. The dealer who sold it to me was fascinated with the cicadas. He indicated they are edible and full of fiber and protein. He said he would eat one if anyone would give him five dollars. Yuck. I am glad to report that nobody took him up on the offer. Shoot, when I was a kid, you could get another kid to eat a bug for just 25 cents. Inflation, I guess.



Cicadas have been around for at least 44 million years, as the photo to the left can attest. By my calculations, 44 million divided by 17, that's 2,588,235 generations ago. The date on the fossil description reminds me of the old joke about the museum docent telling a visitor the fossil they were looking at was 25 million and 2 years old. The visitor asked "how can you date it so precisely" and the docent explained that a professional paleontologist had examined and said it was 25 million years old, and that was 2 years ago.

The June meeting is our last meeting until September. I hope everyone has a happy summer of mineral collecting and my fingers are crossed that we can get actually get back to meeting at the Smithsonian's National Museum of Natural History in September. In the meantime, look out for the cicadas and if you decide to eat one, please don't tell me. I don't want to know.

Sharing Time

In keeping with our presentation this month, please review your collections for native coppers and other associated minerals from the Upper Peninsula of Michigan, also known as Copper Country. No coppers, no problem. We would also enjoy seeing any other minerals you wish to share with the group. If you find it interesting, we will enjoy seeing and hearing about it at our meeting on June 2nd.

May 2021 Business Meeting

by Andy Thompson, MSDC Secretary

MSDC President David Hennessey called the meeting to order and warmly welcomed all members and guests and thanked everyone for coming. He invited any guests who wished to introduce themselves and share their reason for attending and one person said he wanted to improve his ability to identify minerals. Dave then thanked MSDC's past presidents who were present and said he hoped that next year, if someone volunteered to replace him, he could join that group.

Treasurer's Report: John noted that our membership had increased by one person paying their dues.

Old and New Business: No old business issues were raised but several new issues were discussed. Dave commented that many of the Smithsonian museums were reopening and the National Museum of Natural History (NMNH), the club's meeting place, was moving in that direction. However, the NMNH was several months away from reopening to the public and as yet there was no firm date for doing so.

New business also included the news that the club's parent organization, the Eastern Federation (EFMLS) announced that due to the State of New York's covid-related restrictions about large public gatherings, the annual convention for 2021 was cancelled. The September Wildacres session held in North Carolina, however, is open and Dave highly recommended participating. Although the May session was cancelled, the September session is still a "go" (see: [Wildacres - EFMLS](#)).

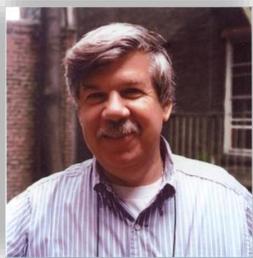
Ken Reynolds invited everyone to participate in the GLMS-MC monthly meetings, held on the second Monday of most months. For information on upcoming topics, speakers and programs, see [GLMSMC - Welcome!](#).

Geology in the News: Bob shared that Pandora, which claimed to be the world's largest jewelry "making" company, will cease using mined diamonds (see: [Pandora, world's largest jewelry maker, will no longer use mined diamonds - CBS News](#)). Discussion included a story about a newly engaged woman's requirement that her engagement diamond be lab created, thereby avoiding damage to the environment and the violence associated with blood diamonds.

Lastly, Andy P reported a story described in a New York Times article of April 29, 2021 concerning the meteorite that astronomers traced as having originated from the asteroid Vesta. In the early hours of June 2, 2018, in a very rare event, a large asteroid was detected headed toward Earth. That night it exploded in the air above a national park in Botswana. Because scientists had tracked the meteorite's path before it entered the Earth's atmosphere, they could develop its orbit and traced it back to the asteroid Vesta.

Scientists concluded that the asteroid began its journey 22 million years earlier when two asteroids collided and started a large asteroid shard on its journey toward Earth. As of November of 2020, 24 small meteorites had been found in the Botswana site. Further discussion ensued.

With no further geological news reported by attendees, Dave called for and received a motion to close this portion of the meeting. He asked Yury to introduce the evening's program and presenter. 



Human consciousness arose but a minute before midnight on the geological clock. Yet we mayflies try to bend an ancient world to our purposes, ignorant perhaps of the messages buried in its long history. Let us hope that we are still in the early morning or our April day.

– ***Stephen Jay Gould***

A Collector's Story

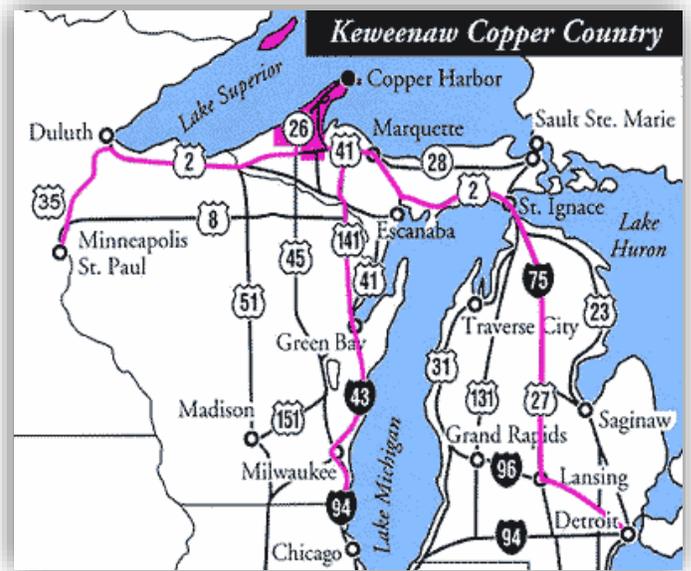
by James Hird, MSDC's Guest Speaker for June

I was born in Cheektowaga, New York and raised there. I started picking rocks at the early age of 7. In high school, I was taken under the wing of my 9th grade earth science teacher and learned about the geological section of the Museum of Science. I started to get a wider appreciation for minerals with the club there. My parents became members with me at that time. We spent many weekends collecting in Lockport, New York and the surrounding areas around Buffalo. We even spent one Mother's Day in Lockport Quarry because my mother got bit by the rockhound bug as well. My parents were active members of the Buffalo club till their deaths.

In 1965, after a two-year degree at Erie County Tech, I transferred to Michigan Technological University where I earned a BS in Mechanical Engineering. This is where and when I was introduced to the Lake Superior Copper District and the beauty and history of the Keweenaw Peninsula. The freedom of collecting in that area at the time with all the abandoned mines and still-working underground mines has stuck with me for all time. The area is not as easy to collect in as it once was, but there are still materials that can be found on public land and with permission of the owners of the waste rock piles.

At Tech, I took mineralogy classes for extra credit and made many friends in the student collecting group, the Seaman Mineralogical Museum, and the local rock club. Graduation in 1968 took me away from the Keweenaw, but something of me stayed behind. After two years working in Niagara Falls for Union Carbide, I returned to the Keweenaw with a new wife for two years of graduate work in mining engineering and rock collecting.

With bills to pay and life to live, I next headed for West Virginia and the coal fields where I spent 30 plus years working in and around coal mines for U.S. Steel doing maintenance, engineering, and design work on both surface and underground facilities. My work was not about minerals, but my eye was always open for the occasional quartz crystal or other mineral trace. Collecting there was fun, but I was always drawn back to the Keweenaw and the rich copper and history of the area.



We joined the local rock club, The Kanawha Rock and Gem Club out of Charleston, WV, when we first moved to West Virginia. It was 134 miles north of our home in the southern tip of WV, which made hard to attend meetings. The distance and my work schedule put a damper on our ability to attend club activities, but we still managed to support the club and its shows.

Maintenance is hard on a family life and after two children and 25 years of marriage, my wife and I parted ways. My son also attended Tech and now lives with my two granddaughters in Palmer, Michigan. With my daughter living in the Buffalo area, part of me is still in both areas. The pull of the Keweenaw still takes me back again and again, now for family reasons as well as collecting.

After my kids and wife were gone from home, I returned to Kanawha Club and with retirement approaching and more time on my hands, I was able to start a new part time job, get remarried, become club president, show chairman, and spend more time in my beloved Keweenaw. When my wife Bonnie was introduced to the rockhound hobby, she took to it and has since gotten into beading and other lapidary arts. We have made many trips to the Copper Country together to collect during Keweenaw Week in the fall and ride snowmobiles in the winter. We also attended many sessions at Wildacres, the EFMLS' lapidary retreat in Little Switzerland, NC.

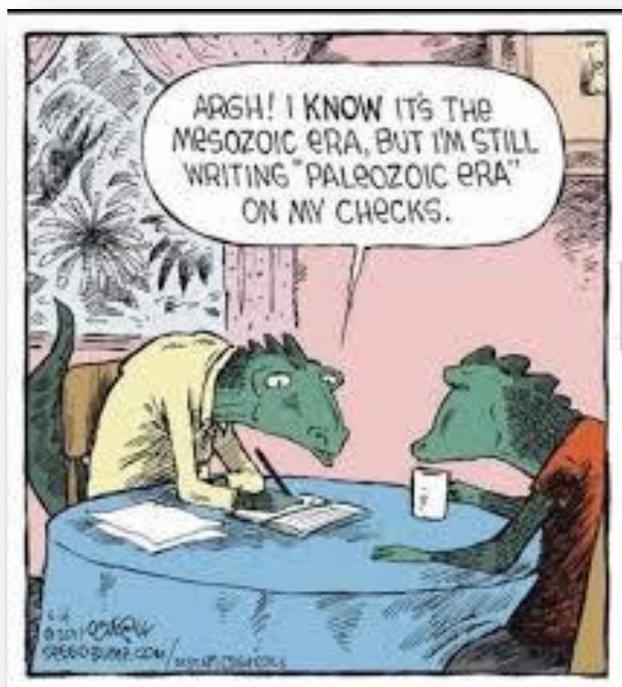
That brings us to the present. I now specialize in Copper Country minerals, native copper from around the world, mining artifacts, history, and memorabilia from that special region of the copper country. For the last 13 years, Bonnie and I have enjoyed collecting minerals from other areas, supporting our local Lions Club and the Kanawha Rock and Gem Club. Both Bonnie and I are retired, with me still working part time (soon to retire for good) for fun money. We are involved with the following organizations:

- ✓ Kanawha Rock and Gem Club (our home club)
- ✓ Ishpeming Rock and Mineral Club
- ✓ Buffalo Geological Society
- ✓ Seaman Museum Mineral Society
- ✓ Gary Lions Club Treasurer and Secretary
- ✓ Copper Country Rock and Mineral Club
- ✓ Keeweenaw County Historical Society
- ✓ Tate Geological Museum in Casper WY
- ✓ Fellow of the Mineralogical Record

When we have time, and there is always time for that, we head north for the 1,000-mile drive back to the shores of Lake Superior and the copper country as often as we can. Sometimes it's just to sit on the beaches and watch the sun set.

But always keeping an eye out for agates! 

Humor Section



MSDC May 5 Program Summary:
“The Gemstones of Ancient Egypt”

Presented by Derek Yoost

Synopsis by Andy Thompson, MSDC Secretary

GEMSTONES OF ANCIENT EGYPT



Yury Kalish, MSDC Vice President for programs, introduced Derek Yoost, the evening's presenter. Derek is a life-long fossil, meteorite, and mineral collector and is active with several clubs in the northern New Jersey area. He began his presentation by saying his approach would be more general than technical and will not include charts or formulas.

The ancient Egyptians, he noted, created beautiful jewelry and artifacts by making use primarily of four materials: lapis lazuli rocks, carnelian, Persian turquoise, and high-carat gold. Each has its own story of where it originated and how it was valued in the Egyptian culture.

Lapis

For the Egyptians, as for the earlier Babylonian and Sumerian cultures, lapis was the most highly valued material, and for them, rarer than gold. Derek pointed out that it is a rock, not a mineral, and typically is composed of lazurite with lesser amounts of calcite and pyrite.

What contributed to the high value of lapis was its scarcity. For the Egyptians and the earlier civilizations, the only known source for lapis was Afghanistan's Sar-e-Sang mines. They were located in the remote and rugged north-east mountainous region of the country, near today's border with Tajikistan. There were no roads into the

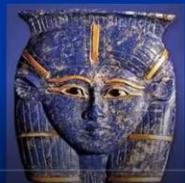
Lapis Locality



remote Kush mountains, and no modern equipment for excavation. All the mining had to be done by hand. The precious rocks had to be transported on the backs of men or pack animals.

One of the most important and common uses for lapis was for jewelry, especially for scarabs, images of the dung beetle. The example shown below to the lower left, made of lapis and gold, represented the sun god which rolled across the sky each day. Derek noted that the dung beetle scarab, as well as the two breastplate images above the scarab, contain the four main materials commonly featured in so many Egyptian artifacts: lapis, carnelian, Persian turquoise, and gold. His presentation to MSDC focused on those materials and included numerous examples of their use in artistic artifacts.

Lapis Artifacts



Lapis Artifacts



Carnelian Artifacts



Carnelian

Carnelian, the second of the four materials, is the brownish-red mineral which the Egyptians used for carving various images related to royalty and divinity.

In the images shown to the left and below, carnelian was made into a cabochon representing the sun. But it also served practical purposes, such as intaglio rings that were used as seals impressed on warm wax to seal official correspondence, as exemplified by the oval image shown above. Also shown are examples of carnelian carved into protective scarabs, found near the hearts of wrapped mummies.

Carnelian Artifacts





Derek suggested that the source of the carnelian was probably the banks of the Nile. Unlike lapis, carnelian was collected locally from the water's edge. Of the five artifacts shown in the image, Derek singled out the first one, detailed in the image to the left, for particular comment.

“This kind of thing is incredible to me. Being someone who does lapidary, this particular bead is only two inches long. How they were able to carve this intricate design into something as hard as carnelian, without the use of diamond or abrasive bits is beyond my comprehension.”

Persian Turquoise

Persian Turquoise Artifact



The third of the four most common materials found in Egyptian jewelry and artifacts is known as Persian turquoise. The mineral is so-named because historically it had been extensively mined in ancient Persia, in the region known today as Iran. The Egyptians mined this distinctive blue-green colored mineral, as shown on the map above, mostly in the Sinai desert peninsula just north of the Red Sea.

The Egyptian pendant jewelry shown above, Derek pointed out, includes Persian turquoise, as well as lapis, carnelian, and gold. He noted that of the four materials, three are relatively soft as designated on the Mohs scale, and only the carnelian is harder, in the 6 to 7 range (between orthoclase feldspar and quartz).

Libyan Glass

Before turning to the abundant gold artifacts from Egypt, Derek called attention to two additional and somewhat mysterious minerals that played unique roles in the Egyptian culture, the first being Libyan glass. As indicated on the map, it has been found in the southern desert of Egypt, near the border with Libya. The site has yielded an unusual light green mineral whose identity was initially uncertain. Some thought it was a light green variety of carnelian. A beautiful example of this desert glass was recovered from King Tut's tomb, discovered by Harold Carter in 1920. Cabochon specimens are included in Tut's breastplate jewelry, pictured below.



More recent testing of this material documented that it is actually glass, probably generated by a meteorite. Given that the Libyan glass is not found near a crater, scientists concluded that the incoming meteor exploded above the ground with the heat melting the surrounding sand, similar to the tektite generated by the heat of other meteorite

impacts (also by the 1945 testing of the first atomic bomb at Los Alamos, New Mexico). Some of the Egyptian specimens have dark inclusions, now understood to be tiny fragments of the exploded incoming meteorite.

Libyan Desert Glass Artifact: King Tut's Breast Plate



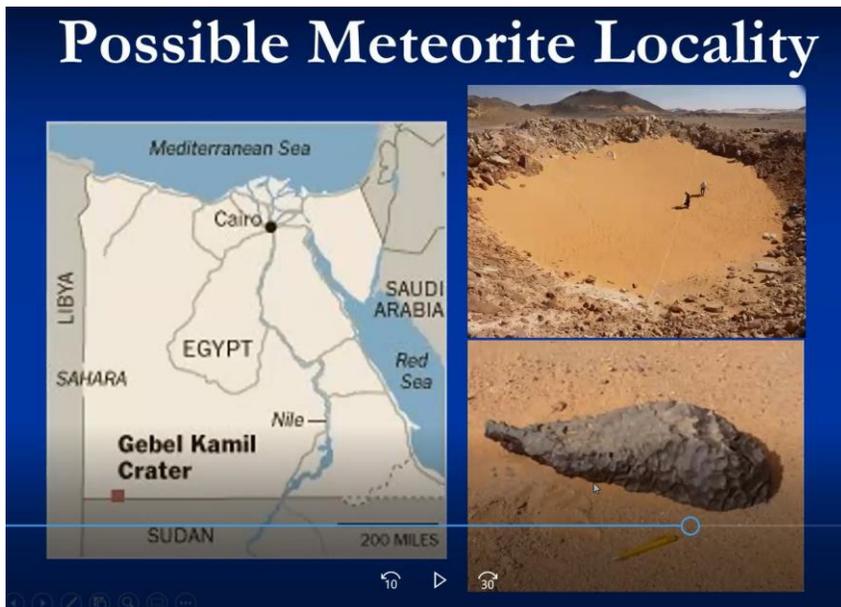
Iron

Researchers found that the Egyptians used a second mysterious material also found in the southern Egyptian desert, but closer to the border with Sudan, as shown in the map below. It was in very short supply.

This second mysterious material Derek mentioned was iron, a puzzling find given there were no iron mines found in Egypt or its neighboring countries.

So, what was its source? Adding to that mystery was the fact that examples of Egyptian iron were rare and found essentially only in the tomb of King Tut, in the form of iron daggers with handles and sheaths composed of high-carat gold.

Derek explained that testing resolved this mystery as well, because this iron had a high content of nickel, characteristic only of certain meteorites.



This meant that King Tut, during his life, wore jewelry featuring two materials which, so to speak, came from beyond the earth: one, from a meteorite which generated Libyan desert glass, and another, directly from an iron-nickel meteorite seen in the daggers shown in the photo below.



High-carat Gold

The gold-laden dagger handles provided a smooth transition to Derek's discussion of the fourth and final major mineral of his presentation, high-carat gold.

From the very first mineral discussed in this presentation, lapis lazuli, to the carnelian and Persian turquoise jewelry, many of these artifacts were surrounded by gold. Derek noted that gold was commonly found in the royal

artifacts, not only in jewelry, but also on a much larger scale. Tut's royal chair for example, shown on the next page, had a wood structure topped with an application of gold foil.

The triple nested sarcophaguses in which Tut was buried had an innermost coffin made entirely of 243 pounds of high-carat gold. Clearly, in contrast to lapis, the ancient Egyptians had an abundant supply of gold which made lapis more expensive than the readily available gold.

Gold Artifacts



Similarly, the famous death mask of Tut, pictured in the first slide at the beginning of Derek's presentation, was made of 22 pounds of high-carat gold. And even that highly important head-piece has extensive inlays of lapis lazuli, suggesting lapis was used exclusively for Egyptian royalty.

Derek noted there were additional gemstones of ancient Egypt, including the ground-breaking manufacturing of Faience (glass jewelry) and the common use of amethyst.

At that point in his presentation, Derek generously shared examples of his personal collection of Egyptian minerals. His "show and tell" was joined by MSDC attending members spontaneously showing their own Egyptian-related collectibles, providing an extensive display of interesting and impressive specimens.

Discussion

MSDC President Dave Hennessey thanked Derek for his excellent presentation and invited members to ask questions. Typical of our group, there were many, encompassing the following topics:

- Discussion of how some paintings of the middle ages and renaissance, including some found in the Sistine Chapel, used azurite blue pigment. Azurite was less expensive than lapis pigments. Painters with less money used azurite, which, as a copper-based pigment, is less stable than lapis.
- Azurite gradually changes to malachite via a weathering process that involves the replacement of some of azurite's carbon dioxide molecules with water (changing the carbonate to hydroxide ratio from 1:1 of azurite to the 1:2 ratio of malachite), resulting in a color shift towards green. This conversion of azurite into malachite is attributable to the low partial pressure of carbon dioxide in air.
- The approximate date of the creation of the Libyan desert glass via the meteorite air explosion was roughly 29 million years ago.

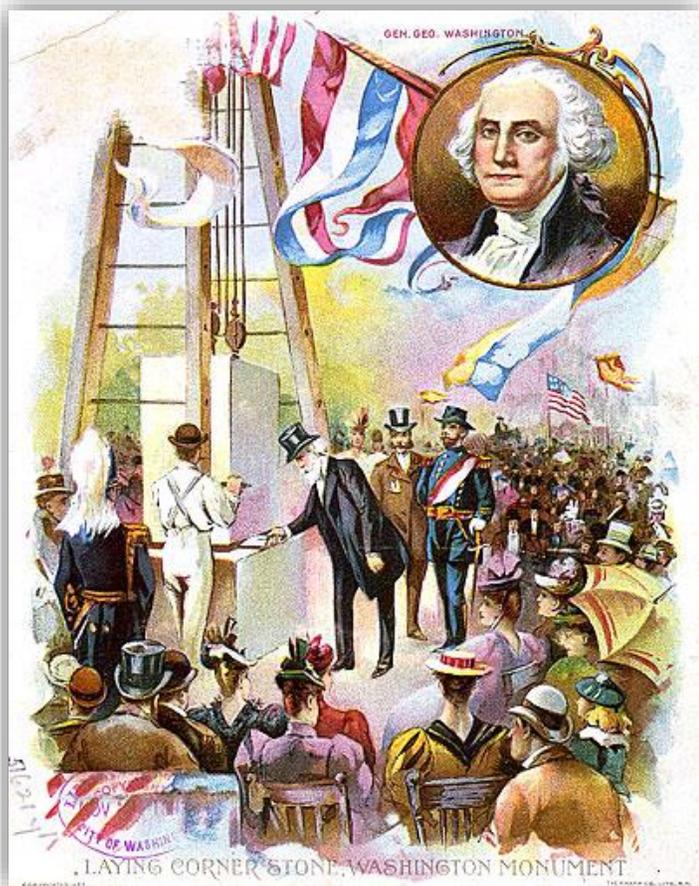
- Additionally, questions for Derek included, but were not limited to, where the Egyptians obtained their gold (trade with neighboring African and Mediterranean countries), the significance of the pharaonic beard (masculinity), the surprising absence of peridot in Egypt, the modern-day abundance of reproductions for sale to tourists, Derek’s future presentation on meteorites, Russian sources for buying Libyan glass, and whether lapis fluoresces (it does not).

Dave Hennessey once again thanked Derek Yoost for his excellent presentation and for fielding all the participants’ questions. The audience signaled their appreciation with applause (Zoom style silent clapping). Dave thanked all for attending and participating. 

North Carolina’s Link to the Washington Monument

By Ken Rock, MSDC Newsletter Editor

Text adapted from “The Secret’s at the Peak of the Structure” by Kempton H. Roll, Rock & Gem Magazine, February 1997



What does the Washington Monument have to do with the gems of North Carolina? Answer: more than most people realize. Attached to its top is a five-pound pyramid of solid aluminum. The aluminum was made from rubies and sapphires mined primarily in North Carolina.

When the monument was finally topped off in 1885, the event was reported widely because the government decided to do it with a specially created cap at the apex: a pyramidion, as they called it, made from aluminum. The ceremony marked the culmination of 37 years of hard work (see image of cornerstone laying at left) – with time out for the Civil War – so the whole nation was excited about the event. Perhaps most excited were the metallurgists of that period because it marked the first time that the unique properties of the newly discovered metal, aluminum, were brought to the public’s attention.

What better way to crown the top of America’s monument to one of its greatest presidents? This



“new” metal was much lighter than steel yet surprisingly strong, had excellent corrosion resistance, and was a good conductor of electricity. It was as precious as silver (silver and aluminum cost the same in the late 1800s), could be cast into the shape of a pyramid, polished to a high luster, engraved for posterity, and allow the United States to demonstrate its leadership in material science and industrial technology. The only problem was that aluminum at the time was very difficult to produce and, therefore, very expensive. It was definitely not the familiar household metal it is today. As it turns out, the best source of aluminum was the corundum crystals being



mined commercially in the gravels and mountainsides mostly in Clay and Macon counties in southwestern North Carolina. Crystals of corundum are more familiar to us as sapphires and rubies. They are the gemstones that rockhounds have been seeking at Carolina gem mines for years.

To turn the mineral corundum, aluminum oxide, into metallic aluminum was far from an easy process. After the mineral crystals were crushed into fine particles, they had to be converted chemically into aluminum chloride and then reduced with metallic sodium to form salt and metallic aluminum. Known as the Sodium Reduction Process, it was the main reason why aluminum production was so costly. The primary reducing agent, metallic sodium, was in itself expensive, but because it also was extremely reactive (bursting into flame on exposure to air), the process was very difficult, dangerous, and costly.

After the masonry work on the monument was completed, the final topping off was scheduled for December 7, 1885. However, Tiffany & Company had other plans and achieved a marketing coup to delay that event. Perhaps because of its link with the source of the crushed gem ore, the jeweler succeeded in “borrowing” the polished aluminum pyramid for display in its Fifth Avenue store.

With appropriate promotional flair, Tiffany & Company then invited its customers to come in and see this precious, soon to be famous, piece of metal and, if they were so inclined to “step over the top of the Washington Monument.” All the customer had to do was be willing to stand in line of Fifth Avenue to await his or her turn to climb the small stair on the showroom floor.

It is likely that many New Yorkers would later in life boast of their physical prowess to envious friends and





relatives. It actually was quite a distinction – the pyramid would crown what was then the world's tallest manmade structure!

Historical note: For a number of years, almost all of the corundum used in the United States and much of Europe came from mines in the Carolinas. Prior to the first World War, Germany was the largest consumer. The Corundum Hill Mine produced some very large crystals, most (but not all) of which were crushed to bits. The mine and others in the area became not only important producers of corundum for abrasives and jewel bearings, but were considered by the metallurgists of the day to be the best, if not the only, source of high-purity aluminum oxide.

Today, bauxite is now the preferred ore for aluminum with production costs a fraction of producing aluminum via crushed corundum. Bauxite is a hydrated aluminum oxide ore typically found in the topsoil of various tropical and subtropical regions. Using bauxite to produce aluminum oxide resulted in costs plummeting by 80 percent almost overnight. 

Please Note:

The officers and directors of MSDC invite your input into this newsletter! Pick a topic that interests you (or find something you've already written) and send it to the MSDC newsletter editor (email address on next page). He will coordinate any needed reviews, discuss photos or images that may help, and work with you to finalize a piece for publication. Try it; you'll like it!

MSDC Club Information

Due to COVID-19, our June meeting 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

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THE MINERAL MINUTES

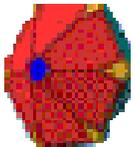


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NEWSLETTER OF THE MINERALOGICAL SOCIETY OF THE DISTRICT OF COLUMBIA

Mineralogical Society of DC
Time Sensitive Dated Material

Useful Mineral Links

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