THE NORTHERN VIRGINIA MINERAL CLUB INC

The Mineral Newsletter

Meeting: June 27 Time: 7:30 p.m.

The meeting will be online due to the coronavirus pandemic. Details on page 6.

Purpurite

Sandamab Pegmatite, Erongo, Namibia

Source: Wikipedia. *Photo: Anaxibia.*

Volume 62, No. 6
June 2022
Explore our website!

June Meeting Program:

Minerals of Quiruvilca, Peru

Details on page 6

In this issue …

Mineral of the Month
Purpurite

by Sue Marcus

Our June Mineral of the Month is purpurite, which I hope will be easy to examine. Its name was bestowed by Louis C. Graton and Waldemar T. Schaller in 1905, based on the Latin for the color, *purpura*. We've met Dr. Schaller before in these columns. He was prolific in his descriptions of minerals. He, either alone or in collaboration, described more than a dozen new minerals, so we may encounter him again. He was the second recipient of the Roebling Medal, the highest honor awarded by the Mineralogical Society of America and probably mineralogy's highest honor altogether. Louis Graton, Schaller's assistant when they described purpurite, went on to become a distinguished mineralogist as well.

Purpurite, a manganese phosphate ($MnPO_4$), forms a solid solution series with heterosite, an iron phosphate ($FePO_4$). This means that iron and manganese atoms may replace each other, so minerals with only manganese are purpurite and those with only iron are heterosite. In the purpurite-heterosite series, intermediate mineral species have not been recognized by the International Mineralogical Association.

Collectors cannot precisely tell the difference unless specimens have been analyzed. As a general rule, I try to determine whether the locality for a specimen is noted for one end member of a series or the other; this information, I assume, gives me the more common mineral option for that locality. Confusingly, purpurite and heterosite look alike to me. Stichtite looks similar but comes from a different geologic environment, so it can be ruled out based on the geology and other minerals of the locality.

Purpurite is a secondary mineral, formed from leaching lithium minerals, most commonly lithiophilite ($LiMn^{2+}PO_4$) or triphylite ($LiFePO_4$). Triphylite and lithiophilite oxidize, becoming ferrisicklerite or sicklerite, with further weathering transforming the rock into heterosite or purpurite, depending on the relative amounts of manganese or iron in the geologic environment. Sicklerite and ferrisicklerite may be geologically unstable: purpurite and herosite are more common minerals, and some sources refer to purpurite forming after triphylite or lithiophilite, without an intermediate alteration mineral. Purpurite usually forms masses or crusts, although it may rarely pseudomorph after triphylite crystals.

The Earth probably contains—and the collector may unearth—many more purpurite localities than mentioned here. Lithium-bearing pegmatites are found throughout the world. Purpurite is only probable, geologically, in some of them but in more of them than have produced specimens. All reports of purpurite are not included in this article, particularly those for which I could find no images or confirming descriptions.

Summer break ahead!

Northern Virginia Mineral Club members,

The June club meeting will be an online meeting via Zoom on **June 27, 7:30 p.m.** For meeting details, see page 7. Raymond McDougall will be the speaker; the program will be on the Andes minerals of Quiruvilca, Peru. See details on page 7.

Purpurite, Corvaceira Quarry, Castelo de Penalva, Viseu, Portugal. Source: Mindat.

Purpurite with other phosphates, Bendada Mines, Sabugal, Guarda, Portugal.
Source: Mindat; photo: Ermanno Gianoli.

Although purpurite is assigned to the orthorhombic crystal system, I have not seen any purpurite crystals, even as micromounts. Purpurite is usually dark purple, though specimens are lightened and brightened by treatment with acid. I do not know any means for collectors like us to determine whether or not a purpurite specimen has been treated. Specimens viewed online while researching this article range in color from pinkish purple, to matte purple, to material that looks like covellite (with a submetallic luster and a purple that seems like iridescence of a darker material), to blackish purple.

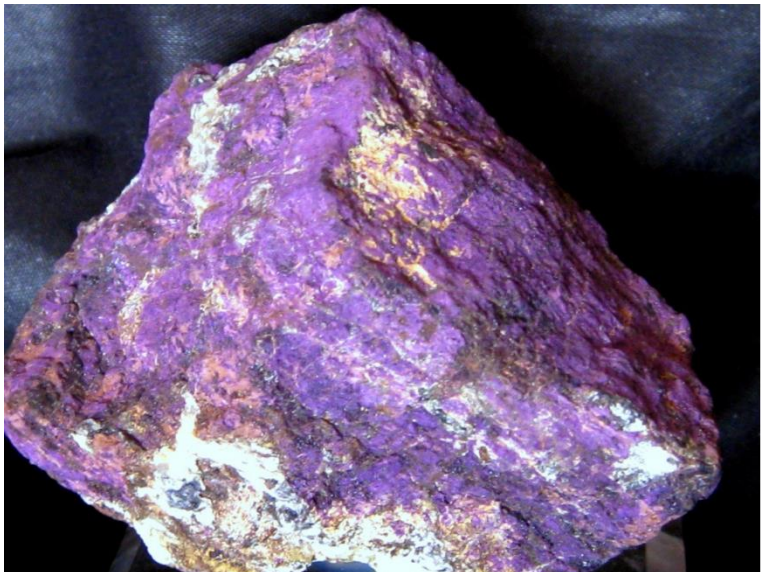
The Faires Mine in the King Mountain Mining District near Charlotte, NC, is the source of the specimens that were initially described—in other words, the type locality of purpurite (the spelling of Faires is based on the name of the former owner). The Faires Mine produced tin from cassiterite and possibly lithium from spodumene from underground workings. The deposit is in pegmatite with two orebodies. Mining ceased in 1929.

Since tin was and is classified as a strategic mineral by the U.S. government, the Faires Mine was part of the documentation of strategic mineral deposits in 1942. In the report by Kesler, purpurite is noted as "scarce," as is vivianite, another phosphate in the mine.

An earlier report by Graton and Lindgren noted lithiophilite at this mine, from which they deduce that the purpurite formed. The Graton and Lindgren publication includes a purpurite analysis by Schaller and mention of cleavage in the purpurite. They examined thin sections of purpurite and other minerals, so the cleavage may not have been visible without strong magnification—stronger than used by micromounters.

In Connecticut, purpurite is reported—and shown in images—from the Fillow Quarry near Ridgefield. Cameron and others hypothesize that the purpurite formed from the alteration of lithiophilite.

New Hampshire has produced purpurite specimens, though the information on one locality is ambiguous. Cheshire County produced two specimens from two deposits, according to Mindat. A specimen on the website of John Betts, a major mineral dealer, is labeled as coming from the Palermo Mine near North Groton, NH. The Mindat website for the Palermo Mine indicates (via a strikethrough for purpurite) that reports of purpurite here were discredited.



Purpurite, Pamaró Mine, Minas Gerais, Brazil. Source: Mindat; photo: Vasco Trancoso.

Mindat lists purpurite form the Emmons-Ball Mica prospect in Grafton County, NH, with Cameron and others as the information source. Other Mindat listings of purpurite in New Hampshire are discredited, although they are also mentioned in the Cameron reference. Purpurite or heterosite? Perhaps later collectors or researchers provided decisive information.

Purpurite is reported from several localities in Oxford County, ME, though never in any abundance. The localities include the B.B. Number 7 Quarry, the Emmons Quarry, the Tamminen Quarry, and the Brown-Thurston Prospect. Some specimens were treated with acid to enliven the colors. Cameron and others reported purpurite or heterosite from South Twin Mountain, Black Mountain, and Newry, all in Oxford County, although their reports are not corroborated by others.

A 1953 report on the pegmatites of the Black Hills, SD, stated that purpurite was seen in the Dyke Lode, Rainbow No. 4, Tin Queen, and Gap pegmatites. This was a field-based study, so the material identified as purpurite onsite could be heterosite because no analytical results were included in the study results. The authors, who conducted their field work in the 1940s, found purpurite most abundant at the Dyke Lode and the Rainbow No. 4 properties.

Moving on to Colorado, purpurite is found, though rarely, in the Crystal Mountain Pegmatite Mining District of Larimer County. Mindat also reports purpurite from other mining claims in Larimer County, although it is unknown whether those claims still exist; mining claims are not permanent unless patented. The geographic coordinates provided by Mindat could be a guide for those seeking to find these locations, but specimens should not be removed from active mining claims without the claimant's permission.

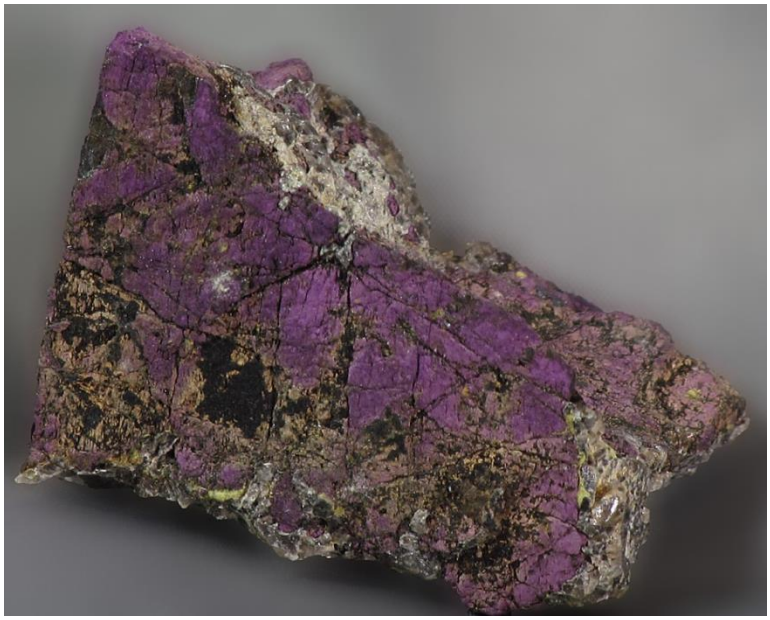
San Diego County, CA, is famous for its tourmaline and lithium-bearing minerals like lepidolite. The Pack Rat Mine, in the Jacumba Mining District near the Mexican border, is farther south than the better-known Pala Mining District. Along with the usual purpurite specimens, Mindat shows a lithiophilite crystal that has pseudomorphed into purpurite. The specimen is shown in two images by two different owners giving slightly different specimen measurements, although the images are obviously of the same crystal.

The pegmatites of Minas Gerais, Brazil, have produced a wealth of minerals. The Galileia and Corrego Frio pegmatites were reported to contain purpurite. Purpurite specimens are shown in Mindat from Linópolis and the nearby Pamaró Mine; they may exist in other pegmatites in this region.

A quarry in Varuträsk, near the village of Skellefteå, Sweden, was explored and possibly mined for lithium minerals. The primary minerals found there were altered, resulting in a few purpurite and heterosite specimens. Heterosite seems to have been more abundant than purpurite.

Portugal may have some of the richest localities for purpurite. It has been recovered from the Bendada

Purpurite on quartz, Brown Thurston prospect, Rumford, Oxford County, ME. Source: Mindat.



Purpurite, Purple Haze claim, Larimer County, CO. Source: Mindat.

Mines near Guarda and the Corvaceira Quarry near Castelo de Penalva. Both properties were enriched in phosphate minerals. Some purpurite specimens display the natural purple color of this mineral, whereas others show the covellite submetallic iridescent look.

Purpurite is reported from at least two localities in France, though these seem to be minor occurrences. Mindat photos show one specimen of heterosite and none of purpurite from Chanteleoube in Nouvelle-Aquitaine. This may indicate that specimens are more likely to be heterosite than purpurite. Conversely, Mindat shows only one specimen of purpurite and none of heterosite from Cirque de Pénitence in Occitainie. In Italy, purpurite or heterosite was noted in pegmatites in the Lecco Province.

Several properties in the Erongo Region of Namibia have been sources of purpurite. The Cameroon Pegmatite, the Clementine II Pegmatite, and a pegmatite at the Sandamap Farm produced specimens that are pictured on Mindat. Images of Camaroon specimens look best, and the one from the Sandamap Farm is questionable because it may be heterosite. (As mentioned, without analysis, there is no surety in any specimen being one or the other mineral species.)

A minor mystery comes from material from an online seller sourced from the "Wessels Mine in Usakos, Namibia." The pictured specimen is blue (the color of rough lapis). The Wessels Mine is a famous locality in the Kalahari Manganese Fields of South Africa (a different country) that is known for superb mineral specimens, though purpurite is not known to occur there. Purpurite is a manganese mineral, so that might seem to make its occurrence possible at the South African Wessels Mine, but the mine has no known source of the lithium minerals that would make finding purpurite there probable.

What about another Namibia locality, perhaps a Wessels Mine there? I couldn't find a Namibian Wessels Mine, although Mindat includes a description of lithium-bearing Usakos pegmatites near Spitzkoppe, Namibia. The description indicates that purpurite was reported from the Usakos pegmatites but that the report was discredited. It may be that the odd blue purpurite is some other mineral. If it is really purpurite, it is most likely from the Usakos pegmatites—or the finder is concealing the true locality.

Pegmatites in Australia reportedly had purpurite in them, but I could find no images or descriptions. The most promising potential source of Australian purpurite may be the Lewis Rock Hole Pegmatite near the Wodgina Mine in Western Australia. Steve Sorrell's website promises a photo of a purpurite specimen from the Wodgina area, but he hasn't actually posted the photo. Much earlier, Simpson found "a black mass of purpurite and psilomelane" and lithiophilite initially altering "to amber yellow, then to brown with blood red flakes (pure purpurite)." These are

Purpurite, Cameroon Pegmatite, Erongo, Namibia. Source: Mindat; photo: Rolf Luetcke.

Purpurite, Usakos, Erongo, Namibia.
Source: Wikimedia; photo: John Sobolewski.

interesting comments on purpurite coloration. I could find no photographs or other confirming information.

Can purpurite be faceted? Purpurite is relatively soft; it is a phosphate so it must be cleaned carefully; and it is readily cleavable and uncommon. For all these reasons, it makes a poor gemstone. All the specimens I saw online and the one in my own collection are opaque, so "faceted" purpurite would be a cabochon with flat sides.

However, if a rock or mineral can be formed into a gemstone, lapidarists will do so. The Gem Society's website shows an 11.52-carat cabochon and notes that similar stones "up to several inches may be cut from cleavages." Other cabs are for sale online.

The purpurite specimens I saw for sale on the online markets range from about $3 to about $120, including mineral specimens, tumbled stones, and cabochons. Remember that you won't find *crystalized* purpurite specimens.

Buyers beware! Many specimens offered for sale may have been treated with acid. Many sellers (though not all) offer dubious or vague locality information. If you consider purchasing a purpurite specimen online, look for the best location information that you can find; compare it to better sources, like Mindat, for that locality; and feel free to ask the seller questions.

Technical Details

Chemical formula .....$MnPO_4$; $Mn^{+3}(PO_4)$
Crystal form.....Orthorhombic
Hardness.....4-5
Specific gravity.....3.2-3.5
Color.....Shades of purple, magenta, gray, black (some drab purple specimens have their color enhanced)
Streak.....Red, purple
Cleavage.....1 good, though rarely visible; possibly 1 poor (according to Graton and Lindren 1909)
Fracture.....Brittle
uster.....Earthy, submetallic

Sources

Calderwood, M.A.; Grguric, B.A.; Jacobson, M.I. 2007. Guidebook to the pegmatites of Western Australia.

Cameron, E.N.; Larrabee, D.M.; McNair, A.H. [and others]. 1953. Pegmatite investigations, 1942-45, New England. USGS Prof. Pap. 255. Washington, DC: U.S. Geological Survey. 352 p.

The Diggings. N.d. (no date). Faires Tin Mine.

Graton, L.C.; Lindgren, W. 1906. Reconnaissance of some gold and tin deposits of the southern Appalachians, with notes on the Dahlonega mines. USGS Bull. 293. Washington, DC: U.S. Geological Survey: 38-39. https://doi.org/10.3133/b293 https://pubs.er.usgs.gov/publication/b293

Hatert, H,. Crystal chemistry and geothermometric applications of primary pegmatite phosphates. In: Simmons, W.B.; Webber, K.L.; Falster, A.U. [and others]. PEG 2013: Contributions to the 6th international symposium on granitic pegmatites. 26 May-2 June; Bartlett, NH.

Kesler, T.L. 1942, The tin-spodumene belt of the Carolinas, a preliminary report. In: Strategic mineral investigations, 1942, short papers and preliminary reports. USGS Bull. 936-J. Washington, DC: U.S. Geological Survey: 245-269.

Larsen, E.S. 1939. Presentation of the second Roebling Medal of the Mineralogical Society of America to Waldemar T. Schaller. American Mineralogist 24: 53-58.

Mindat. N.d. Fletcher Mine, NH.

Mindat. N.d. Lithiophilite.

Mindat. N.d. Purpurite.

Mindat. N.d. Sargent Mine, NH.

Mindat. N.d. Triphylite.

Miyawaki, R.; Hatert, F.; Pasero, M.; Mills, S. 2019. New minerals and nomenclature modifications approved in 2019. Mineralogical Magazine 83(4): 615-620.

Page, L.C. [and others]. 1953. Pegmatite investigations 1942-1945, Black Hills, South Dakota. USGS Prof. Pap. 247. Washington, DC: U.S. Geological Survey. 228 p.

Pires, F., Palermo, N., Fonsea, M, and Lima, R. 2013. Phosphate minerals from the Galileia pegmatite field, Minas Gerais, Brazil: equilibrium conditions. In: Simmons, W.B.; Webber, K.L.; Falster, A.U. [and others]. PEG 2013: Contributions to the 6th international symposium on granitic pegmatites. 26 May-2 June; Bartlett, NH.

Simpson, E.S. 1928. Famous mineral localities: Wodgina, Western Australia. American Mineralogist 13(9): 457-468.

U.S. Geological Survey. N.d. Faires Tin Mine.

Vignola, P.; Hatert, F.; Fransoletz, A-M. [and others]. (FE2+,MN2+)PO4, a new phosphate mineral species from the Malpensata Pegmatite, Lecco Province, Italy. In: Simmons, W.B.; Webber, K.L.; Falster, A.U. [and others]. PEG 2013: Contributions to the 6th international symposium on granitic pegmatites. 26 May-2 June; Bartlett, NH.

Wikipedia. N.d. Purpurite.

June 27 Program

Into the Andes: Quiruvilca, Peru

Raymond McDougall

High in the Andes Mountains of northern Peru, Quiruvilca has produced excellent mineral specimens for many decades. Discovered in the late 18th century and mined on a large commercial scale since 1907, Quiruvilca is one of Peru's oldest and best known polymetallic mines. At various times, this locality has been called the ASARCO Mine and La Libertad Mine, but it is usually simply referred to as Quiruvilca. The mine has been operated for copper, silver, lead, and zinc.

Among mineralogists and mineral collectors, Quiruvilca is most renowned for world-class specimens of enargite, arsenic, and orpiment; the world's finest hutchinsonite crystals; and exceptional pyrite and bournonite crystals. Quiruvilca has also produced very fine specimens of realgar, chalcopyrite, scheelite, barite, and many other minerals, including the rarities seligmannite and baumhaurite–2a.

The workings at Quiruvilca comprise hundreds of tunnels intersecting over 50 separate epithermal veins within an area covering many square kilometers. Many small underground teams work daily, concurrently producing ore from approximately 60 different working headings within the mining complex.

Although the heyday of mineral specimen production at Quiruvilca is often considered to be long past, the mine has continued to produce small numbers of beautiful, excellent specimens, with sporadic larger finds. This presentation is an overview with an emphasis on the fine minerals of Quiruvilca, inspired by an adventure into the Andes and into this world-famous mine.

Ray McDougall was born in Montreal, grew up in Toronto, and studied mineralogy and geology while completing a B.A. at McGill University in 1992. He went on to become a corporate/securities lawyer for 18 years in Toronto, where he was an internationally known partner of the firm Stikeman, Elliott LLP, working with clients in the Canadian mining industry.

Ray retired from law in 2013 to become a mineral dealer (McDougall Minerals) and chair of the annual Rochester Mineralogical Symposium. He has been an avid mineral collector since childhood and has enjoyed field collecting across Canada and around the world. Living in the woods near Bancroft, Ontario, he burrows in holes in the woods and travels internationally, all in pursuit of fine mineral specimens. He also spends a lot of time in a dark room taking mineral photographs.

June 27 Club Meeting

Online Meeting

by Tom Kim, President

We're having an online club meeting on **June 27, 7:30 p.m.** Please join us on Zoom:

https://us06web.zoom.us/j/86919061641?pwd=bzNrVXNlaUpzdUExZ3BjVk5VdnZVQT09

Meeting ID: 869 1906 1641

Passcode: 598883

Hope to see you there!

President's Collected Thoughts

by Tom Kim

Another year for our club is coming to a close. As usual, we'll be taking a summer break from July to August and return to meetings in September. We still have a club picnic on July 23 at the home of Jason Zeibel, which we'll announce over our email list.

I hope you enjoy your summer! I'll leave you with this gem from Job 28:

Surely there is a mine for silver,
and a place for gold that they refine.
Iron is taken out of the earth,
and copper is smelted from the ore.
Man puts an end to darkness
and searches out to the farthest limit
the ore in gloom and deep darkness.
He opens shafts in a valley away from where
anyone lives;
they are forgotten by travelers;
they hang in the air, far away from mankind;
they swing to and fro.
As for the earth, out of it comes bread,
but underneath it is turned up as by fire.
Its stones are the place of sapphires,
and it has dust of gold.
…
But where shall wisdom be found?
And where is the place of understanding?
Man does not know its worth,
and it is not found in the land of the living.
The deep says, 'It is not in me,'
and the sea says, 'It is not with me.'
It cannot be bought for gold,
and silver cannot be weighed as its price.
It cannot be valued in the gold of Ophir,
in precious onyx or sapphire.
Gold and glass cannot equal it,
nor can it be exchanged for jewels of fine gold.
No mention shall be made of coral or of crystal;
the price of wisdom is above pearls.
The topaz of Ethiopia cannot equal it,
nor can it be valued in pure gold.

Tom

Beware of phishing!

At least one club member has recently received a scam email in President Tom Kim's name regarding gift cards for veterans.

There seem to be a lot of these phishing emails out there. Make sure you look closely at the email address to make sure there's nothing off about it. If you are at all suspicious of an NVMC email, please reach out to the club to confirm before you respond or open any attachments.

Be safe out there!

NVMC Summer Picnic

This year, Jason Zeibel and family have graciously offered to host a summer picnic for NVMC members on Saturday, July 23. This will be a welcome opportunity to reconnect with fellow club members during our summer break.

Stay tuned for details to come by email!

Mysterious Mineral From Earth's Mantle Discovered in South African Diamond

by Nicoletta Lanese

Editor's note: *The article is in LiveScience (September 23, 2019).*

A single grain of rock lodged in a diamond contains a never-before-found mineral.

And that newfound substance could reveal unusual chemical reactions unfolding in the depths of the mantle, the layer of Earth that lies between the planet's crust and outer core. … *Read more.*

EMFLS Annual Convention
September 23-24, 2022

The EFMLS's 72nd Annual Meeting & Convention will be on September 23-24, 2022, in Harrisburg, PA, sponsored by the Central Pennsylvania Rock and Mineral Club (CPRMC). Fillable registration forms can be found on the EFMLS website at EFMLS.org. The registration deadline is August 23, 2022.

The host hotel is the Penn Harris Hotel at https://pennharrishotel.com, with free wi-fi, free parking, an outdoor pool, and a restaurant. It is also pet friendly. Hotel rates are $99 per night for either single or double occupancy; reserve your room under EFMLS Convention by calling 717-763-7117 (the cutoff date for the group rate is September 5, 2022). Checkin is after 3 p.m. and checkout by 11 a.m.

The convention checkin is from 4 p.m. to 6 p.m. at the hotel on Friday, September 23. A room has been reserved for the Cracker Barrel and business meetings; check with the hotel front desk for the name and location of the meeting room.

The 2-day ticket to the CPRMC show costs only $5. The Annual Auction will take place on Saturday at 1 p.m. at the show. The show is being held at Harrisburg Consistory Scottish Rite located at 2701 N. 3rd St. in Harrisburg. The show is minutes away from the Capitol Building, if you are interested in a little sightseeing.

The banquet is on Saturday, September 23, at a cost of $45 per person. Evan Jones, son of Bob Jones, will be speaking to us from Arizona via Zoom.

There is a field trip to National Limestone, Mt. Pleasant Mills Quarry on Sunday at 10 a.m. There is no fee to attend but you must be registered for the convention. According to Mindat, this quarry is famous for the abundance of calcite crystals, both clear and orange in color, and tank-colored dogtooth calcites, many of them fluorescent. You can also find strontianite, fluorite, and fossils of the Devonian era. The quarry is active during the week, so you can find something interesting each time you go.

Collector Story
Know-It-All Mistake

by Eugene Cisneros

Editor's note: *The story is adapted from Mindat, 22 January 2017.*

This happened about 50 years ago, when I was young enough to know it all.

I was diligently digging out nice epidotes from the bottom of my 4-foot-deep excavation while my friend John was digging in his own crater a dozen yards away. The epidotes were so good that I focused intently on carefully removing them from a jumble of crude quartz crystals.

John yelled over, asking me whether I was finding anything. Not wanting to divulge my success quite yet, I told him I was finding a few really crude quartz crystals, and I tossed him one so he could see.

"If you don't want them," he replied, "throw them over here."

So I did.

Later on, after a hard day of digging, I gloatingly showed off my prize epidotes and asked John whether he'd found anything as good.

"No," he replied, "but I got a lot of great scheelite crystals, and I didn't even have to dig for them."

Bench Tip: Silver Discoloration

Brad Smith

Working with jewelry involves an ever-increasing number of skills. Chemistry comes into play when dealing with discoloration on metal. Three types of discoloration are typical for sterling silver: tarnish, firescale, and firestain. All three have to do with components in the sterling alloy (92.5 percent silver and 7.5 percent copper) and how they react with oxygen and the heat of soldering or with pollutants in the air. Firescale and firestain also occur in 14- or 18-karat gold because of the copper content.

Tarnish is a grayish coating that results from a reaction of the silver with sulfur-based compounds in the air. Typically, the compounds are pollutants from burning petroleum fuels, but they can also come from other sources. I once tarnished all the silver in my display case by putting a pretty specimen of pyrite (FeS_2) in with the jewelry! Preventing tarnish involves keeping sulfur away from the metal. Plastic bags will help, and anti-tarnish strips are available from jewelry supply companies to pack near your items. Tarnish is easily removed by hand polishing with a jeweler's cloth or with one of the products sold for cleaning good silverware. Another way is to remove it chemically. Put a piece of aluminum in the bottom of a dish large enough to contain your piece. Heat enough water to cover the silver. Mix in 2 tablespoons of sodium carbonate per cup of water and pour into the dish. Be sure the silver touches the aluminum. Sodium carbonate is the main ingredient in washing soda. Read the labels in grocery and hardware stores.

Firescale is another type of discoloration. It is a dark gray to charcoal-colored film that forms on sterling or other copper alloys like brass or bronze when we heat it with a torch. The copper in the alloy reacts with oxygen in the air to form a dark cupric oxide coating on the surface. Luckily, the oxide is easily removed by dissolving it in a mild acid, generally called a pickle. It's important not to let firescale form on a solder joint because it will block the flow solder over the joint. There are two ways to prevent firescale. Most common is to use a flux, a borax-based solution applied to the metal before soldering. When melted, borax forms a thin glassy layer that keeps oxygen away from the metal. A second way is to do your soldering on a charcoal block. Together with the flame, charcoal greatly reduces the amount of oxygen in the area being soldered. In either case, oxygen is prevented from reaching the metal, so no cupric oxide firescale is formed. A second oxide—cuprous oxide, reddish in color—can also form when soldering copper or a high-copper-content alloy like bronze or brass. A black-looking piece you put in the pickle sometimes comes out red because the black cupric oxide is dissolved by the pickle but the red cuprous oxide is not. The discoloration can be sanded or polished off, but an easier way is to use a "super pickle," a mixture of fresh pickle with a healthy shot of hydrogen peroxide from the local store.

Firestain is the worst form of discoloration. If firescale is like getting dirt on your shirt, then firestain is like getting ink on it because the discoloration seeps in and stains the material. Firestain happens when you heat a piece of silver too hot, too long, and/or too many times, causing oxides to build up below the surface of the metal. You generally don't notice it until after polishing. It appears as a darker area of the surface and is easy to spot under light bounced off a piece of white paper. Because firestain is below the surface, there's no easy solution. Depletion guilding can work for some pieces. Otherwise, removing it calls for sandpaper and aggressive polishing. A much better approach for a piece that will require a large number of solderings is to protect the metal from firestain by applying liberal amounts of a firecoat. Regular soldering flux will provide some protection but is not as effective as preparations made specifically for the task. Jewelry supply companies offer several commercial solutions, but my favorite is the Prips mixture. I use it every time I intend to do more than two solderings on a piece.

Smart Solutions for Your Jewelry Making Problems
amazon.com/author/bradfordsmith

Wildacres in Fall

Wildacres is a fantastic retreat located on Pompeys Knob just off the Blue Ridge Parkway about an hour north of Asheville, NC. Signing up for the September 5–11 session will give you the opportunity to take one or two classes; hear excellent talks from the guest speaker, Mary Ehlers, a jewelry artist; and participate in a variety of other activities. Check the EFMLS Wildacres website for registration opportunities. The guest speaker and the courses listed below are firmly lined up for September.

Coming to Wildacres in September 2022 …

Cabochons—Basic (*Bernie Emery*): Transform rock into a cabochon. Learn trim saw, grinding, sanding, and polishing. Slabs provided or use your own. Bring apron, safety glasses. No experience needed. 2-day class, semester 1. $30 cost.

Cabochons—Intermediate (*Bernie Emery*): Learn techniques for cutting different shapes. Slabs provided or use your own. Bring apron, safety glasses. Prior experience with cabbing and trim saw. 2-day class, semester 2. $30 cost.

Chainmaille—Basic (*Jim Hird*): Create jewelry using unsoldered links. Basic patterns taught using inexpensive copper rings with Wildacres tools. Bring optivisors/magnifier. No experience needed. 2-day class, semester 1. $50 cost.

Chainmaille—Intermediate (*Jim Hird*): Build on your abilities learned in the first class to do more advanced patterns and work in colors and mixed-material rings. Basic required. 2-day class, semester 2. $50 cost.

Flint knapping (*Guy Meador*): Learn fracture mechanics and methodology to make stone tools. Includes a Flintknapper starter kit with plenty of flint to get started. Bring long pants, gloves, safety glasses, and high-top shoes. No experience needed. 4-day class. $130 cost.

Loop n loop—Basic (*Chuck Bruce*): Explore 2 basic patterns and finish a bracelet and pair of earrings in each. Bring closed-toe shoes, good glasses/optivisor/magnifier, eye protection, apron. No experience needed. 2-day class, semester 1. $80 cost.

Loop n loop—Advanced (*Chuck Bruce*): Explore 2 new patterns and finish a bracelet and pair of earrings in each. Bring closed-toe shoes, good glasses/optivisor/magnifier, eye protection, apron. Basic required. 2-day class, semester 2. $80 cost.

Viking knit (*Valerie Johnson*): Learn a sampling of techniques used nearly 1,300 years ago to make necklaces, bracelets, and other decorative objects. Use a few tools and supplies to create stunning chains. Bring eye protection required and an optivisor or similar. No experience needed. 2-day class, semester 1. $50 cost.

Wireworks (*Valerie Johnson*): Learn a sampling of techniques needed to weave, bend, and twist copper and sterling silver wire to make earrings, bracelets, and pendants. Bring eye protection and an optivisor or similar. Hazard: Wire wrapping can also damage acrylic or long fingernails. Viking knit required. 2-day class, semester 2. $50 cost.

Soapstone Carving 101 (*Ken Valdo*): Learn the material, tools, safe handling issues, and methods used to complete a carving. Produce a simple piece and a more advanced sculpture. Bring apron, gloves, and eye protection; dust mask can help, as can optical magnification. No experience needed. 2-day class, semester 1. $30 cost.

Soapstone Carving 101 (*Ken Valdo*): Use your basic skills to make a more advanced sculpture and hone your artistic skills. Skills learned in the first semester are required. 2-day class, semester 2. $30 cost.

Physical Properties of Gems and Minerals

Luster

by Barbara Smigel

Editor's note: *Ever wonder that the "technical details" for a mineral actually mean? As part of her online course on gemology, the author describes some of them. This article, adapted from the original, examines luster.*

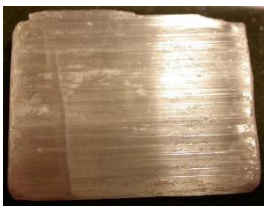
The luster of a gemstone comprises the quantity and quality of the light reflected from its surface. Each species and variety of gemstone has an inherent potential luster. The actual luster of any individual piece might be less due to the skill level of the lapidary or facetor; the presence of inclusions; or various chemical or physical changes, such as oxidation or abrasion, which can affect the surface.

The names for the various lusters in gems derive from familiar surfaces; the prefix "sub-" indicates "just less than." Some lusters are so characteristic of a particular stone that they are named for it, such as "pearly" or "adamantine" (from Greek *adamas* for diamond). Most gems have a glassy ("vitreous") luster.

Look at the picture of the quartz below and compare what you see on the surfaces to what you'd see on a freshly washed and dried drinking glass. Keep that in mind when thinking of "vitreous luster.

Note: *All examples are taken from Wikipedia.*

Adamantine (white diamond)



Pearly (muscovite)

Greasy (opal)

Metallic (pyrite)

Submetallic (sphalerite)

Resinous (amber)

Waxy (jade)

Satin (gypsum)

Dull (kaolinite)

Vitreous (clear quartz)

June 2022—Upcoming Events in Our Area/Region (see details below)

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1 MSDC mtg	2	3	4
5	6	7	8	9	10	11
12	13 GLMSMC mtg	14	15	16	17	18
19 Juneteenth	20	21 Summer begins	22 MNCA mtg	23	24	25
26	27 NVMC mtg	28	29	30		

Disclaimer

All meetings/shows are tentative during the coronavirus pandemic, and club meetings might well be remote. Check the website for each organization for more information.

Event Details

1: Washington, DC—Mineralogical Society of the District of Columbia; info: http://www.mineralogicalsocietyofdc.org/.

13: Rockville, MD—Gem, Lapidary, and Mineral Society of Montgomery County; info: https://www.glmsmc.com/.

22: Arlington, VA—Micromineralogists of the National Capital Area; info: http://www.dcmicrominerals.org/.

27: Arlington, VA—Northern Virginia Mineral Club; info: https://www.novamineralclub.org/.

THE NORTHERN VIRGINIA MINERAL CLUB INC

Crystals are the flowers of the Mineral Kingdom

2022 Club Officers

President: Tom Kim
president@novamineral.club
Vice President: Sue Marcus
vicepresident@novamineral.club
Secretary: David MacLean
secretary@novamineral.club
Treasurer: Roger Haskins
treasurer@novamineral.club
Communication: Vacant
Editor: Hutch Brown
editor@novamineral.club
Field Trip Chair: Vacant
Greeter/Door Prizes: Vacant
Historian: Kathy Hrechka
historian@novamineral.club
Show Chair: Tom Taaffe
show@novamineral.club
Tech Support: Tom Burke
tech@novamineral.club
Webmaster: Casper Voogt
webmaster@novamineral.club

The Northern Virginia Mineral Club

Visitors are always welcome at our club meetings!

PLEASE VISIT OUR WEBSITE AT:
http://www.novamineralclub

Please send your newsletter articles to:
Hutch Brown, editor
4814 3rd Street North
Arlington, VA 22203
hutchbrown41@gmail.com

RENEW YOUR MEMBERSHIP!

SEND YOUR DUES TO:
Roger Haskins, Treasurer, NVMC
4411 Marsala Glen Way, Fairfax, VA 22033-3136

OR

Bring your dues to the next meeting.

Dues: Due by January 1 of each year; $20 individual, $25 family, $6 junior (under 16, sponsored by an adult member).

Club purpose: To encourage interest in and learning about geology, mineralogy, lapidary arts, and related sciences. The club is a member of the Eastern Federation of Mineralogical and Lapidary Societies (EFMLS—at http://www.amfed.org/efmls) and the American Federation of Mineralogical Societies (AFMS—at http://www.amfed.org).

Meetings: At 7:30 p.m. on the fourth Monday of each month (except May and December).* (No meeting in July or August.)

**Changes are announced in the newsletter; we follow the snow schedule of Arlington County schools.*

You may reprint the materials in this newsletter, but if you use copyrighted material for purposes beyond "fair use," you must get permission from the copyright owner.

This publication may contain copyrighted material for the noncommercial purpose of advancing the understanding of subjects related to our hobby. This "fair use" of copyrighted material accords with section 107 of the U.S. Copyright Law.