



The Mineral Newsletter

Meeting (unless canceled): April 27 Time: 7:45 p.m.

Long Branch Nature Center, 625 S. Carlin Springs Rd., Arlington, VA



Orpiment

Twin Creeks Mine, Nevada

Source: Wikipedia; photo: Robert Lavinsky.



Note!

Coronavirus transmission remains a high risk. Before attending any event, including the April NVMC meeting, make sure it is actually being held!

Volume 61, No. 4

April 2020

Explore our [website!](#)

April meeting might be canceled!

Our meeting room is closed for now—details on page 6

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Mineral of the Month Orpiment

by Sue Marcus

Our April Mineral of the Month is orpiment, a lovely, toxic mineral that can crumble to powder. It is an arsenic sulfide (As_2S_3). Its name, orpiment, is an allusion to its color and an early use, *Auripigmentum*—Latin for gold (*auri*) pigment (*pigmentum*). Read on, for not all orpiment turns to dust.

Igneous Origins

Fumeroles and volcanically heated orifices like hot springs discharging arseniferous gases can cause orpiment to form through sublimation. Sublimation usually happens when a solid changes into a gas without going through a liquid phase (think dry ice—frozen carbon dioxide). When I first saw that orpiment forms through sublimation, it made no sense to me because orpiment isn't a solid changing to gas. So I searched the web for “gas to solid” and learned that the term for that is also ... you guessed it, sublimation.

Economic orpiment mineral deposits that formed at shallow and intermediate depths (through epithermal and mesothermal geological processes, respectively) have produced some of the most spectacular orpiment crystals. Marble, a metamorphic rock, sounds like the other extreme from the volcanic settings described above, but it too can host orpiment.

Primary orpiment—that is, when the mineral forms initially and not through decomposition of another mineral—is rare and can be lustrous and beautiful. Photos of orpiment on Mindat are eye candy for mineral collectors, and even noncollectors will appreciate the natural beauty of orpiment (as in the photo on the right).

Localities

There are many great localities for orpiment, most no longer producing. The best specimens I found—or at least the best specimen photos—were of orpiment from the Quiruvilca Mine in La Libertad, Peru. Some are translucent and gemmy. One photo looks like a re-algar crystal cluster. There are rosettes and bowties—amazing crystal forms—along with crystals of immense size for the species, up to almost 5 centimeters. Also in Peru, the Palomo Mine in Huancavelica was the source of unusual orpiment pseudomorphs after re-algar as well as balls of orpiment. There are also other

Happy Easter!



Northern Virginia Mineral Club members,

The [Long Branch Nature Center](#) where our club meets is temporarily closed, as are most restaurants. Plans for our speaker on April 27, Linda Benedict, are on hold. If we proceed, then we will first meet with Linda for dinner at 6 p.m. at the Olive Garden, Baileys Cross Roads, 3548 South Jefferson St. (intersecting Leesburg Pike), Falls Church, VA. Please check with Ti Meredith at ti.meredith@aol.com.



Orpiment from Quiruvilca, La Libertad, Peru. Photo: Bob Cooke.

arsenic minerals at this locality, including anorpiment (As_2S_3), a polymorph of orpiment.

If you, like me, think of orpiment as having hues in the yellow palate, browse the web for photos of specimens from Russia's El'brusskiy Arsenic Mine. They are closer to the red-orange hues of vanadinite. Deposits in Shimen County, Hunan Province, China, also range



Orpiment from the Senduchen Deposit, Yakutia, eastern Siberia, Russia. Photo: Bob Cooke.

from bright orange to yellow, with some gemmy crystals and some crystals up to 3 centimeters long. With or without contrasting white calcite matrix, these can be eye-catching specimens.

Unusual radiating fibrous balls of orpiment crystals come from Maramures, Romania. In Austria, orpiment fills cracks in carbon-rich limestone. Orpiment is found in many other places throughout the world, but well-crystalized specimens are relatively rare, especially in salable quantities.

Nevada has always been the main source of U.S. specimens (see the specimen on the cover). Lovely transparent to translucent, golden-yellow to butterscotch orpiment crystals were found at the sedimentary-hosted Twin Creeks gold mine in Humboldt County in 1999 and 2000 by noted dealer Brian Lees. This mine is still operating, but no other finds have been reported so it might be closed to collecting or else the collecting contract might have ended.



Orpiment from the Hunan Realgar Mine, Shimen, Huan Province, China. Photo: Bob Cooke.

The nearby Getchell Mine in Nevada was an older, well-known orpiment specimen producer. My husband Roger and I enjoyed collecting there a couple of times. On one occasion, we had a flat tire in the pit on the Saturday of a long weekend. We promptly left and drove slowly back to town, where we found a local garage just before it closed.

The White Cap Mine in Nye County was another source of Nevada orpiment. A property in Utah, in Toole County, produced some too.

Alteration

Now let's get into the complexity of minerals today. Most of you know that I'm a retired geologist (aka old). I thought orpiment would be a fun mineral to research and write about, but just as I thought I was almost finished writing, I stumbled onto inconvenient information. Since I don't completely understand it, I'll leave it to you to decide what is fact and what isn't.

Realgar is chemically As_4S_4 and pararealgar is As_4S_4 , a polymorph of realgar—same chemistry, different crystal form. Orpiment is As_2S_3 , slightly different chemically from either realgar or pararealgar. Based on textbooks, current websites, and training, the conventional wisdom of geologists, mineralogists, and collectors is that realgar alters to orpiment on exposure to light for prolonged periods of time.

While conducting research for this article, however, I looked at a Mindat forum thread on the three minerals and learned that studies using Raman spectroscopy and empirical chemical studies of phase transition due to temperature and photosensitivity changes seem to indicate that at least most fine-grained, mixed realgar and “orpiment” is actually realgar morphing to pararealgar. It all depends on the light and temperature conditions.

What’s a collector to do? If you have a nice specimen of primary orpiment crystals, meaning that they were originally formed as orpiment, then your specimen is almost certainly orpiment. If you have realgar that has changed color, become flaky, or turned to yellow dust, you probably have or had pararealgar.



*Orpiment from the Getchall Mine, Humboldt County, Nevada.
Photo: Bob Cooke.*



*Orpiment from the Getchall Mine, Humboldt County, Nevada.
Photo: Bob Cooke.*

In any case, protect all these minerals from light and swings in temperature! One article mentioned alteration in a matter of months.

Reports indicate that fine-grained specimens from the Getchall Mine quickly alter (probably to pararealgar). However, pure primary orpiment from Getchall and from Russia is relatively stable.

Uses

Due to its softness, orpiment is easily ground into powder; with its color, it has been used for paint at least since the ornamentation on Tutankhamun’s tomb. In our hemisphere, it was used as a pigment in mortuary ritual in Chile sometime between 800 and 200 BC. The Chilean information was tested by Raman spectroscopy, so scientists are sure it was orpiment, not pararealgar. Later, orpiment was also used to decorate the walls of the Taj Mahal.

Orpiment was and is a poison and is still used for that purpose. Old Chinese documents show orpiment used as correction fluid. Like other toxins, orpiment was used in medicines. It was also used in “small shot,” similar to the buckshot used to kill large birds in the 17th century.

Today, orpiment is an arsenic ore. I was surprised to learn that our main use of arsenic is still pressure-treated lumber, followed by lead-acid batteries and vehicle wheel weights. More highly purified arsenic is used in semiconductors, photoconductors, and oil-cloth.

Arsenic may also be used in some pesticides, though probably not in the United States, where it has not been produced since 1985. That's probably good for miners, though not so good for mineral collectors. The United States imports most of its arsenic from China and Morocco. Morocco is not a source of orpiment specimens.

Do not wear or consider making jewelry from orpiment. Wearing arsenic-based minerals is not a wise idea. Aside from its toxicity, orpiment is delicate—brittle and light sensitive.

Technical Details

Chemical formula	As_2S_3
Crystal form	Monoclinic
Hardness	1.5–2
Specific gravity	3.49
Color	Yellow, orange, butterscotch
Streak	Yellow
Cleavage	1 perfect, 1 imperfect
Fracture	Micaceous
Luster	Resinous

Acknowledgments

I would like to acknowledge the helpful review and additions by my husband, Roger Haskins, and the skillful editing by club editor Hutch Brown.

Sources

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*Orpiment from Russia. **Top:** Senduchen Deposit, Yakutia, eastern Siberia. **Bottom:** El'bruskiy Arsenic Mine, Kabardino-Balkarian Republic, northern Caucasus. Photos: Bob Cooke.*

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Linda Benedict
Painting Rocks

April 27 Program—IF we meet!!

NOTE—Unless the Long Branch Nature Center is open, we will cancel the meeting. Check for nature center closure information [here](#).

Linda Benedict loves painting rocks and has been doing so for over 20 years. She started in 1999 after finding a book in the library on the subject.

You don't have to be an artist to do this fun activity. You only have to be able to hold a paint brush and have some imagination. This will be a fun activity for everyone—young, old, and young at heart. We will be painting a ladybug, so anyone can do this.

Think of it as just another way of approaching the rocks we all love. This activity could open up a whole new way for you to look at rocks without crystals. It's fun to learn something new, and it will add another dimension to our hobby for all of us who love rocks. You don't have to bring anything because Linda has plenty of rocks that will make great-looking ladybugs. Please come for an evening of fun! ↗

Spring Auction Meeting
March 23, 2020

The annual Spring Auction meeting was canceled due to the risk of transmitting the coronavirus. The Spring Auction was postponed to the May club meeting. ↗



Links To Explore

Editor's note: The item is adapted from EFMLS News (January 2020), p. 6.

The following links contain information related to our hobby. If you have a favorite link, please send it to efmlsnews.editor@gmail.com.

American Federation of Mineralogical Societies:
www.amfed.org

American Lands Access Association: www.am-lands.org



American Geological Institute: www.americangeosciences.org

Gemological Institute of America:
www.gia.edu

Mineralogical Society of America:
www.minsocam.org

National Speleological Society:
www.caves.org

Smithsonian Magazine Smartnews:
www.smithsonianmag.com/smartnews

Society of American Silversmiths (care of silver, glossary of silversmithing terms and tools):
www.silversmithing.com

U.S. Geological Survey (information on earthquakes, water, volcanoes, landslides, and so on):
www.usgs.gov

WebSightings from the Maryland Geological Society (articles on paleontology and geology):
www.ecphora.net/mgs/new_interesting_articles.html ↗

Combing Calvert Cliffs

by Sheryl E. Sims

Editor's note: The article, adapted from the September 2011 issue of *The Mineral Newsletter*, is a reminder of the rich fossil treasures found in our area.

Pat Rehill and I made a spontaneous decision to visit Calvert Cliffs on July 3. The cliffs extend 30 miles or so from Chesapeake Beach to Drum Point. It was my first time fossil hunting, and I was anxious to find sharks' teeth and other fossils.

Our search began on a cloudy but enjoyable morning. Taking our time, we searched for triangular shiny objects. I found a teeny, tiny one and Pat found a couple as well.

It was interesting to learn from Pat that southern Maryland was covered by the sea 20 to 25 million years ago, during the Miocene Epoch, leaving layers of sand, shell, rocks, and fossils behind, now exposed by erosion. It's said that over 600 species of fossils have been found and identified.

Sharks' teeth can be found from varying species: great white, white, sand, mako, silky, and snaggletooth sharks. Some sharks' teeth found during the Miocene were up to 5 inches long! Whether you find them on the beach or embedded in the cliffs, the hunt is fun.

Major finds have produced whale vertebrae, large sharks' teeth, and skeletons—some complete—of birds and other animals, such as porpoises and seals. Crocodile teeth are also found as well as pieces of shell from sea turtles.

Visible in the cliffs are mollusk shells. Some of the clam and oyster shells are very old and quite pretty. You can even find sand dollars, crab claws, barnacles, and sea urchins, although they are pretty rare. I found a few pieces of coral.

By noon, it was too hot to continue our search, so we headed to the Calvert Marine Museum. There, we toured the Fort Drum Lighthouse and then headed to the museum.

I was very impressed by the exhibit there. The museum appears to be small, but it is a lot larger than it looks. It has quite a few interesting fossil, fish, and boat displays. I especially enjoyed seeing the fossils and getting a chance to peak into the room where they are cleaned, sorted, and reassembled for mounting.



On the way home, we pulled over to the side of the road to chat with Jim Earman, a local fossil salesman. He had a fossil stand and some pretty amazing fossils for tempting the eager fossil hunter. I invited him to speak to our club, and am hoping that he'll do so in the future.

In the meantime, I look forward to my next fossil-finding adventure so that the next fossils I hold up for a photo-op will be mine! ↗

Quartz

by Fred Schaefermeyer

Editor's note: Fred Schaefermeyer, a longstanding member of several clubs in our area, served as NVMC editor from 1983 to 1986 and as NVMC president in 1988. A mentor to many, he contributed this piece on quartz (lightly edited here) to *The Mineral Newsletter* in September 1983, reprinted in the March 2007 issue. He presents information about quartz succinctly yet with unusual breadth.

Quartz is the second most abundant mineral in the Earth's crust (feldspar is the most abundant). Quartz supplies much if not most of the cutting material used by lapidaries. Its lapidary popularity is attributable to its hardness of 7 on the Mohs scale and its abundant colors and varieties, described below.

Crystalline Varieties

Rock crystal: Colorless clear quartz, commonly in distinct crystals.

Amethyst: Quartz colored in shades of violet, probably due to iron inclusions.

Rose quartz: Rose red or pink, with small amounts of titanium as the probable coloring agent.

Smoky quartz/Cairngorm: Smokey yellow to brown or black, named Cairngorm for the mountains of the same name in Scotland.



Morion quartz.
Source: Wikipedia.



Blue quartz.
Source: The Quartz Page.

Citrine: Light yellow to orange, resembling topaz in color.

Milky quartz/bull quartz: Milky white due to minute fluid or gas inclusions.

Blue quartz: Pale blue, believed to be due to minute inclusions of rutile.

Aventurine: Quartz with inclusions of brilliant scales of colored minerals, such as hematite and chromium mica.

Hyaline: Opalescent white due to an admixture of chalcedony.

Anhydros: Liquid or gas enclosed in a quartz cavity.

Morion: Deep black quartz, almost opaque.

Sagenite: Quartz penetrated with acicular crystals of other minerals, such as rutile, tourmaline, goethite, stibnite, asbestos, actinolite, hornblende, and epidote.

Asteriated stat-quartz: Quartz containing deposits between layers of crystals such that, when cut as a cabochon across the prism, it exhibits asterism.

Cat's eye: Translucent gray or greenish quartz, chatoyant when cut as a cabochon due to fibers of asbestos or actinolite.

Tiger's eye: Light to dark brown ranging to blue or red, a quartz pseudomorph after amphibole crocidolite.

Scepter crystals: A quartz crystal enveloping the top of another crystal, which forms its base.



*Tiger's eye (top); chrysoprase (bottom).
Source: Wikipedia.*

Microcrystalline Varieties

Microcrystalline varieties of quartz come in two types: fibrous and granular.

Fibrous Varieties

Chalcedony is the general term for the fibrous varieties, which are often gray, translucent, and with a waxy luster. Chalcedony is often mamillary, and it is frequently found filling cavities or cracks in the rock.

Carnelian: A reddish, sometimes translucent chalcedony.

Sard: A reddish-brown variety similar to carnelian.

Chrysoprase: An apple-green chalcedony colored by nickel oxide.

Agate: Chalcedony with alternating layers and various colors and hues, in too many varieties to list them all here.

Silicified or agatized wood: Petrified wood, with the wood fibers replaced by silicon dioxide.

Onyx: Like agate, with layers arranged in parallel planes.

Sardonyx: Onyx with sard, alternating in black and white layers.

Heliotrope/bloodstone: A green chalcedony with small red spots.

Granular Varieties

Chert: Chalcedony deposited in pore spaces in sedimentary rocks.

Flint: Chert nodules of nearly pure material.

Jasper: Opaque to translucent chalcedony containing finely divided mineral matter (such as clay and iron oxides), in too many varieties to list here.

Prase: Similar to and occurring with jasper but dull green in color.

Other Varieties/Forms

Quartzite: A metamorphic rock, often of pure silica sand. To differentiate between quartzite and sandstone, break a piece and look at it with a hand lens. If the grains of sand are broken, it is quartzite.

Opal: An amorphous mineral that contains water. The silica forms in ordered spheres, which gives opal its multiple colors and bright hues. ↗



Flint (pure silica chert) was flaked into arrowheads and spear points by the American Indians. Source: Wikipedia.



The Newsletter That Wasn't

by Hutch Brown, Editor

Historical archives, including those of our club, can contain surprises.

Last fall, when the NVMC emptied its storage unit at the Long Branch

Nature Center of old posters and other unneeded materials, I found a folder of old newsletters received in the mail by club member Mark Schultz.

The newsletters were all from 2007, and most were eight-page printouts in the standard desktop publishing layout for the newsletter at the time. The layout was similar to today's, with the same club banner at the top of the first page (though not in color).

Wayne Sukow was president at the time; the vice president (and newsletter editor) was Georgia Olmstead. Names familiar from today included Kathy Hrechka as secretary, Rick Reiber as treasurer, David MacLean as historian, and Tom Taaffe as dealer coordinator for the club show.

One newsletter was strikingly different from the rest—the January 2007 issue. It was only four pages long (two pages, front and back), and the front page in particular was mystifying.

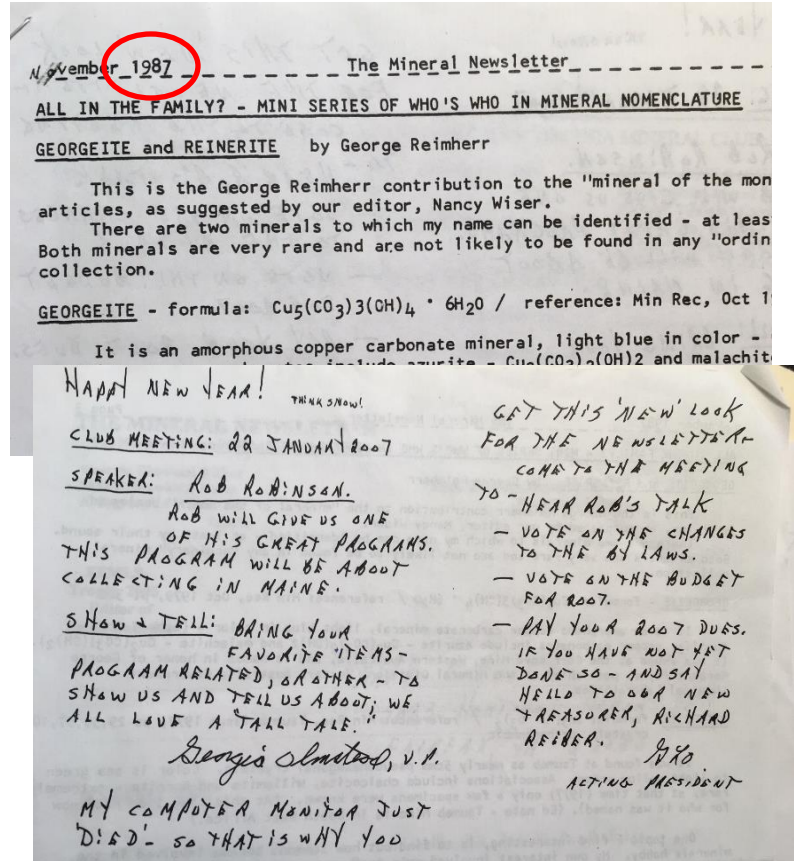
Page 1 of the January 2007 newsletter (shown at upper right) was, quite literally, page 3 from a newsletter published 20 years before (in November 1987).

What in the world?

The main thing on page 3 (or page 1, as it was marked by hand at the bottom) was an article by George Reimherr. Apparently, the editor was so taken by the article that she used it to lead off the January 2007 issue as page 1. She was right; it is an interesting piece, and you can find it on page 12 below.

But instead of being computer generated, the article was an actual photocopy of page 3 from the November 1987 newsletter. In the 1980s, our newsletter was typewritten, so page 1 amounted to a photocopy of a photocopy of an old typewritten page.

Page 2 was almost as strange. The top half (upper right, just below page 1) was a photocopy of handwriting by the editor. It summarized the program for the January 2007 meeting (by Rob Robinson) and asked members



to come vote on proposed changes to the bylaws, vote on the budget for 2007, and pay their annual dues.

The bottom half of page 2 (not shown) was a printout paste-up of the proposed changes to the bylaws (since adopted, allowing the club president and vice president to have an unlimited number of consecutive terms).

Overall, page 2 was a hand-done cut-and-paste job of handwriting and printed text. Pages 3 and 4 were similar hand-crafted cut-and-paste jobs; they showed the membership application, annual budget numbers, and club information.

In her uppercase handwriting at the top of page 2, the editor explained what was going on:

MY COMPUTER MONITOR JUST 'DIED'—SO THAT IS WHY YOU GET THIS 'NEW' LOOK FOR THE NEWSLETTER.

The “new look” must have caused some merriment at the ensuing club meeting. In the March 2007 newsletter, the editor jokingly referred to the January issue as “the newsletter that wasn't.”

The editor claimed (“Yes, honestly it's true”) to have received the following poem by email:

She pressed 'control' and 'enter'
 And disappeared from view.
 It devoured her completely!
 The thought just makes me squirm.
 She must have caught a virus
 Or been eaten by a worm.
 I've searched through the recycle bin
 And files of every kind;
 I've even used the Internet,
 But nothing did I find.
 In desperation, I asked Jeeves
 My searches to refine.
 The reply from him was negative,
 Not a thing was found 'online.'
 So, if inside your 'Inbox,'
 My Grandma you should see,
 Please 'Copy,' 'Scan' and 'Paste' her
 And send her back to me! ➤

Virginia State Fossil

by Bill Beiriger

Editor's note: The article is adapted from Livermore Lithogram (newsletter of the Livermore Valley Lithophiles, Livermore, CA), September 2018, p. 2.

Chesapecten jeffersonius, Jefferson's Chesapeake scallop, was the first North American fossil to be illustrated in a scientific publication, in 1687. The scallop made it's home in Chesapeake Bay, the largest estuary in North America. It is found in the Lower Yorktown Formation of late Pliocene time (from about 4 million to 3 million years ago).

Chesapecten jeffersonius exists only in fossil form. According to a USGS report in 1975, the shells reached about 1½ inches in size.

Jefferson's Chesapeake scallop is one of two state fossils named for Thomas Jefferson because of his interest in natural history. The second is *Megalonyx jeffersonii* (a species of giant ground sloth), the West Virginia State Fossil. ➤

Bench Tip Cutting a Bolt

Brad Smith

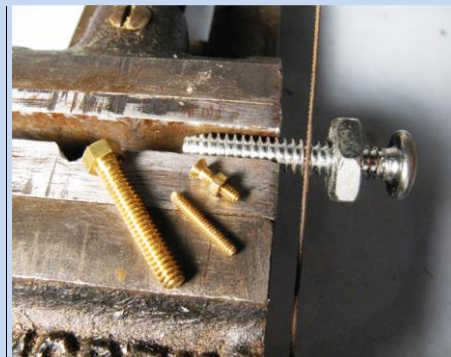
After cutting a threaded bolt, it can be difficult to thread the nut back onto it. And the smaller the bolt, the more difficult it is to restore any distorted threads.

You can use a nut to solve the problem. Here's how.

Screw a nut onto the bolt before cutting it. Grip the bolt by the threaded section that is to be sawed off. Then saw the bolt to the desired length, taper the end with sandpaper or file, and unscrew the nut from the bolt.

Unscrewing the nut over the freshly cut end of the bolt will straighten out any damage that sawing and filing did to the threads. Gripping the bolt by the piece to be sawed off localizes any crushing damage to the piece that will be thrown away.

See Brad's jewelry books at
[amazon.com/author/bradfordsmith](https://www.amazon.com/author/bradfordsmith)



Virginia state fossil: Jefferson's Chesapeake scallop.

Georgeite and Reinerite

by George Reimherr

Editor's note: George Reimherr, who passed away in 2017, was a longstanding member of several clubs in our area. This piece, lightly edited, was first published in *The Mineral Newsletter* in November 1987 as part of a series called "All in the Family: Who's Who in Mineral Nomenclature." It also led off *The Mineral Newsletter* in January 2007 as a photocopy of the typewritten original, now in the NVMC historical archives.

There are two minerals with which my name can be associated, at least by sound. Both minerals are very rare and not likely to be found in any "ordinary" mineral collection.

Georgeite

Formula..... $\text{Cu}_5(\text{CO}_3)_3(\text{OH})_4 \cdot 6\text{H}_2\text{O}$

Source*Mineral Record* (October 1979),
p. 302

Georgeite is an amorphous copper carbonate mineral, light blue in color. Other, more familiar copper car-



Georgeite (top) and reinerite (bottom).
Sources: *e-Rocks* (top); *Crystal Classics* (bottom).



George Reimherr looking at microminerals, one of his favorite parts of our hobby.

bonates include azurite ($\text{Cu}_3(\text{CO}_3)_2(\text{OH})_2$) and malachite ($\text{Cu}_2(\text{CO}_3)(\text{OH})_2$). Georgeite was first found at the Carr Boyd Mine in Western Australia and is named in honor of George Herbert Payne, past chief of the Mineral Division, Western Australia Government Chemical Laboratories.

Reinerite

Formula $\text{Zn}_3(\text{As}^{+3}\text{O}_3)_2$

Crystal Orthorhombic

Source.....*Mineral Record* (Tsumeb issue,
1977), pp. 29–30, 97, 105

Reinerite was discovered at Tsumeb in South West Africa [now Namibia] as nearly 5-centimeter pseudo-hexagonal crystals. The color is sea green to light yellow-green. Associations include chalcocite, willemite, and bornite. It is extremely rare; in 1977, only a few specimens were known. At this time, I do not know for whom it was named. [It was named for Willy Reiner, a senior chemist for the Tsumeb Corporation, who first analyzed the mineral.]

Personal Story

One topic I find interesting is how someone got involved in our hobby. My own interest evolved over an 8-year period, from the time when I received my first

mineral specimen to the time when I visited my first mineral show and joined a mineral club.

Back in my school days, I collected inexpensive science kits. One kit happened to be about fluorescence, and it contained four small mineral specimens and an argon glow lamp. The argon lamp could be placed in an ordinary lamp socket; it gave off a purple glow and included enough longwave ultraviolet radiation to make the specimens glow in the dark. I still have two of the four specimens—thumbail-size chunks of fluorite, one green and the other brown.

My next real fascination with minerals came a few years later. I was given an irregularly shaped but clear specimen of Iceland spar that showed double refraction. You could look at a printed word through the crystal and see two images of the word; one image would rotate around the other as you rotated the crystal.

Perhaps 4 years passed before the next big event: acquiring a good shortwave ultraviolet lamp. This acquisition opened up for me the world of very colorful and beautiful fluorescent minerals from the Franklin-Ogdensburg area in New Jersey.

The following year saw my first visit to a rock shop: Gilman's at the Cave in Hellertown, PA. Specimens from Mexico were plentiful and inexpensive at the time, helping to shift my main interest to crystal specimens, where it is today.

The ready availability of Mexican specimens at the time (early to middle 1960s) was to change dramatically. One mineral dealer put it this way some years later: "I used to go down to Mexico with a handful of cash and return with a carload of minerals. Now I go with a carload of cash and return with a handful of minerals."

Favorite Mineral

My choice has varied over the years, depending in large part on availability. I've gone through my azurite, fluorite, and smithsonite phases, to name a few. My recent interests include rhodochrosites and minerals from Peru.

Favorite Sizes

Thumbnail and miniature. ↗



Rhodochrosite, a George Reimherr favorite, from the Sweet Home Mine in Colorado. Source: Wikipedia; photo: Eric Hunt.

Save the dates! Field Trip Opportunities

Northern Virginia Community College Geology Field Trips

NOVA's Annandale campus offers 1-day weekend field trips related to our hobby. You can get more information at the [Field Studies in Geology—GOL 135 website](#). **Check to make sure the trip isn't canceled!**

Geology of Great Falls, VA

April 18, 2020, 9 a.m.–5 p.m. Meet at the Great Falls Park Visitor Center and spend the day viewing exhibits and touring the park. You must be able to hike several miles on occasionally rocky trails. After the face-to-face activities, you will have 10 days to complete a set of related online assignments.



Geology of Washington, DC

April 19, 2020, 9 a.m.–5 p.m. This walking tour will focus on the geology of our capital and its effect on city design as well as building stone choice and structure. Also covered will be the origin of the diverse rock types used in building, monument, and memorial construction.

Prehistoric Megaturtle

by Daisy Hernandez

Editor's note: The source is Popular Mechanics, February 17, 2020. Thanks to Sue Marcus for the reference!

Researchers recently discovered fossilized remnants in Colombia and Venezuela of *Stupendemys geographicus*, a massive turtle that lived millions of years ago and had the world's largest known carapace. Not only was *S. geographicus* an absolute behemoth, it seems like it was also battle-ready, too.



... These freshwater swimmers lived somewhere between five and 10 million years ago and their shells were larger than even the world's tallest man at 8 feet 11 inches. ... [Read more](#).



Safety Matters Top of the List

by Ellery Borow, EFMLS Safety Chair

Editor's note: The article is adapted from EFMLS Newsletter (February 2020), pp. 5–6.



Lists. Lists often have tops and bottoms. Generally speaking, the top-of-the-list items are more likely to be accomplished. The rest—well, they might be lucky to be done at all.

Our hobby is rife with lists, lists with tops and bottoms. The question here is this: Where do items regarding safety appear on our lists? Do safety items even appear on our lists?

Some people put safety first and foremost. They don't put safety items on their lists because safety is automatic, ingrained, and natural.

Or so it might seem.

The point is to keep safety—your safety, show safety, public safety, equipment safety, you name it—at or near the top of your lists.

All instruction manuals reflect the wisdom of safety. Safety guidelines and procedures regarding personal and product safety usually appear in the front of the manual.

But people don't come with manuals, so we make our own guidelines, just as we do in our hobby. There are no universal safety lists in our hobby; we generally improvise for each activity, making our own lists. Therefore, we can choose whether to place safety at the top of the bottom of the list.

Instruction manuals typically mention safety first, reason enough to put safety at the top of our hobby-related lists. Other reasons for putting safety first:

- It is often easier than trying to fit it in later, saving time and expense.
- It builds confidence that things will go well.
- It can reassure your insurers.
- It shows that you care about yourself, your family, your neighbors, and others.
- It becomes more automatic.

Please, when you make your lists, consider putting safety first. Your safety matters. ↗



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 of all laws and regulations 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, 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 excavated holes that may be dangerous to livestock.

I will not contaminate wells, creeks, or other water supplies.

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 those in designated authority in all collecting areas.

I will report to my club or Federation officers, the 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.

GeoWord of the Day

(from the American Geoscience Institute)

convolution

(a) The process of producing convolute bedding; the state of being convoluted. (b) A structure produced by convolution, such as a small-scale but intricate fold. (c) Convolute bedding.

(from the [Glossary of Geology](#), 5th edition, revised)



I will observe the Golden Rule, use “Good Outdoor Manners,” and conduct myself in a manner that will add to the stature and public image of rockhounds everywhere. ↗

Video

Ore to More (The History of Copper)

by Vérité, Inc.

Editor's note: *The source is YouTube, August 21, 2009. Thanks to Mike Kaas for the reference!*

This video showcases the importance of copper in our society. It walks the viewer, step by step, through the entire refining process. This video was developed for Rio Tinto and has won multiple national awards. Verite is proud of this production and would like to thank everyone involved. ... [Watch the video \(6 minutes\)](#). ↗



Wildacres in Fall

by Hutch Brown, Editor

Wildacres is a retreat located on Pompey's Knob just off the Blue Ridge Parkway about an hour north of Asheville, NC. Signing up for the August 24–30 session will give you the opportunity to take one or two

classes; hear excellent talks from guest speaker Bob Jones (a renowned author, speaker, and prolific writer for *Rock and Gem Magazine*); and participate in a variety of other activities.

Registration is open! You can find a registration form on the [Wildacres website](#). Some classes fill quickly, so register early! You can choose from the courses listed below. ↗

Coming to Wildacres in August 2020

Low-Tech Casting (*Linda Searcy*): Experiment with low-tech casting techniques using MAPP gas torches. Melt silver and cast silver objects using broomstraw, water, dried peas/beans/rice, coffee beans, and rock salt, creating components of jewelry pieces. Students should be comfortable with using torches and soldering techniques. For all skill levels. 4-day class.

Intarsia (*John Miller*): Intarsia is the making of a geometric design using a variety of stones cut to precision and fitted together to form a pattern while leaving no gaps between the pieces. Learn the beginning skills by melding together stones of various colors and patterns to form a finished cabochon. Bring an optivisor. Prerequisite: cabbing experience. 2-day class, both semesters.*

Viking Knit (*Valerie Johnson*): Learn a technique used nearly 1,300 years ago to weave a silver rope. Also called trichinopoly chain, viking knit was used to make bracelets, trim on clothing, and many other decorative objects. Once you learn the skill, it is very easy and uses few tools and supplies to create stunning chains. 2-day class, 1st semester.*

Wire Works (*Valerie Johnson*): Learn how to work with various tools to create sterling silver wire-wrapped jewelry. Become familiar with the techniques needed to bend and twist wire to make a bracelet and a pendant. No experience needed. Hazard: Wire wrapping can damage acrylic or long fingernails. 2-day class, 2nd semester.*

Silversmithing—Basic (*Richard Meszler*): Learn to work silver sheet & wire to fabricate jewelry. Learn annealing/bending/shaping/texturing metal, soldering, piercing, and polishing. You get a kit with metals/supplies & a step-by-step project description. No experience needed. Optivisor strongly recommended. 2-day class, 1st semester.*

Silversmithing—Intermediate (*Richard Meszler*): Learn to make a bezel setting & bail for setting a cabochon to make a pendant. You get a kit with all you need. Basic silversmithing experience, including soldering. Optivisor strongly recommended. 2-day class, semester 2.*

A Journey Through Ultraviolet and Fluorescent Minerals (*Bob “UV Bob” McGuire*): Study the finding of UV light and learn about UV lamps from the start. Ugly rocks—there are no ugly rocks. Just wait until you see how they get along with UV light! Find out what's in your collection and other uses for fluorescence. Can fluorescence be photographed? In this class you will find out how to do it. 2-day class, both semesters.*

*1st semester = Monday/Tuesday; 2nd semester = Thursday/Friday. (Wednesday is free.)

April 2020—Upcoming Events in Our Area/Region (see details below)

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1 MSDC mtg, Washington, DC <i>Canceled</i>	2	3	4
5	6	7	8	9	10	11
12 <i>Easter</i>	13	14	15	16	17	18 <i>NOVA field trip?</i>
19 <i>NOVA field trip?</i>	20	21	22 <i>Earth Day</i>	23	24	25
26	27 NVMC mtg, Arl, VA?	28	29 MNCA mtg, Arlington, VA?	30		

Event Details

- 1: Washington, DC**—Mineral Club of the District of Columbia. *Monthly meeting canceled.*
- ?: Rockville, MD**—Gem, Lapidary and Mineral Society of Montgomery County. *Next meeting date to be determined.*
- 18: Great Falls, VA**—NOVA field trip; 9–5; info, reg: [GOL 135 website](#). *Check website for possible cancellation.*
- 19: Geology of Washington, DC**—NOVA field trip; 9–7; info, reg: [GOL 135 website](#). *Check website for possible cancellation.*
- 22: Arlington, VA**—Monthly meeting; Northern Virginia Mineral Club; 7:45–10; Long Branch Nature Center, 625 S Carlin Springs Rd. *Check nature center website for information on closure [here](#).*
- 24: Arlington, VA**—Monthly meeting; Micromineralogists of the National Capital Area; 7:45–10; Long Branch Nature Center, 625 S Carlin Springs Rd. *Check nature center website for information on closure [here](#).*

Note: All events might be canceled. Before going to any of them, check the website to make sure.



Orpiment from the El'brusskiy Arsenic Mine, northern Caucasus, Russia. Source: Wikipedia; photo: Robert Lavinsky.

Hutch Brown, Editor
4814 N. 3rd Street
Arlington, VA 22203



**Mineral of
the Month:
Orpiment**

PLEASE VISIT OUR WEBSITE AT:

<http://www.novamineralclub>

2020 Club Officers

President: Tom Burke
president@novamineral.club
Vice-President: Ti Meredith
vicepresident@novamineral.club
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show.chair@novamineral.club
Webmaster: Casper Voogt
webmaster@novamineral.club

The Northern Virginia Mineral Club

Visitors are always welcome at our club meetings!

Please send your newsletter articles to:
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).

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for the noncommercial purpose of advancing the un-
derstanding of subjects related to our hobby. This
“fair use” of copyrighted material accords with
section 107 of the U.S. Copyright Law.

Purpose: To encourage interest in and learning
about geology, mineralogy, lapidary arts, and related
sciences. The club is a member of the Eastern Federa-
tion 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>).

You may reprint NVMC materials in this newsletter.

Meetings: At 7:45 p.m. on the fourth Monday of
each month (except May and December)* at **Long
Branch Nature Center**, 625 Carlin Springs Road,
Arlington, VA 22204. (No meeting in July or Au-
gust.)

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

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