THE NORTHERN VIRGINIA MINERAL CLUB INC

The Mineral Newsletter

Meeting: May 20 Time: 7:45 p.m.

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

Chrysocolla

79 Mine, Gila County, Arizona

Photo: Bob Cooke.

Deadline for Submissions

May 20

Please make your submission by the 20th of the month!
Submissions received later might go into a later newsletter.

Volume 60, No. 5
May 2019
Explore our website!

May Meeting Program:

Lost History of Potomac Marble

Details on page 4

In this issue …

Mineral of the Month
Chrysocolla

by Sue Marcus

May's mineral of the month is chrysocolla. It is a slippery mineral, though not in the literal sense. Chrysocolla varies in color, usually from aqua to green, often in the same specimen. The mineral's hardness can vary too, depending on how much the rock has been silicified (permeated with silica).

Chrysocolla is rarely expensive, with pieces readily available for $20 or less. While browsing the Internet, I found a couple of large pieces priced at more than $200, but that is very unusual. I was amused by one source noting that their offering was "used." Higher priced specimens can have a layer of chrysocolla covered by a clear, sparling blanket of drusy quartz.

Chrysocolla is a secondary mineral that forms as copper leaches from richer copper-bearing rocks and ores and is redeposited in a new form. It may form a thin coating or a layer several inches thick.

We now think of chrysocolla as a semiprecious gemstone, but its name comes from a former very different use. In Greek, *chrysos* means gold and *koller* means glue or solder; chrysocolla was solder for gold. The solders were a mixture of copper and other metals, and "chrysocolla" was the solder product of a recipe. The term is still used in this sense in goldsmithing and for certain gold alloys. Theophrastus first used the term in 315 BCE, relating it to goldsmithing.

The French mineralogist André-Jean-François-Marie Brochant de Villiersin used the term chrysocolla specifically for the mineral in 1808. (I'm glad I didn't have to sign Mr. de Villiersin's name on checks!)

All reported crystals of chrysocolla are actually pseudomorphs and not actual chrysocolla crystals. This probably holds true for reports of fibrous chrysocolla too. Webmineral.com notes that the chemical formula can vary and that the mineral can be amorphous. The water content, hardness, and color can vary even within the same specimen, a variability that adds credence to the study by Farges and others (2006) that chrysocolla is really a mixture of spertiniite and amorphous silica (opal). The authors point out that "chrysocolla might not a compositionally homogeneous mineral as is generally assumed." Maybe we have

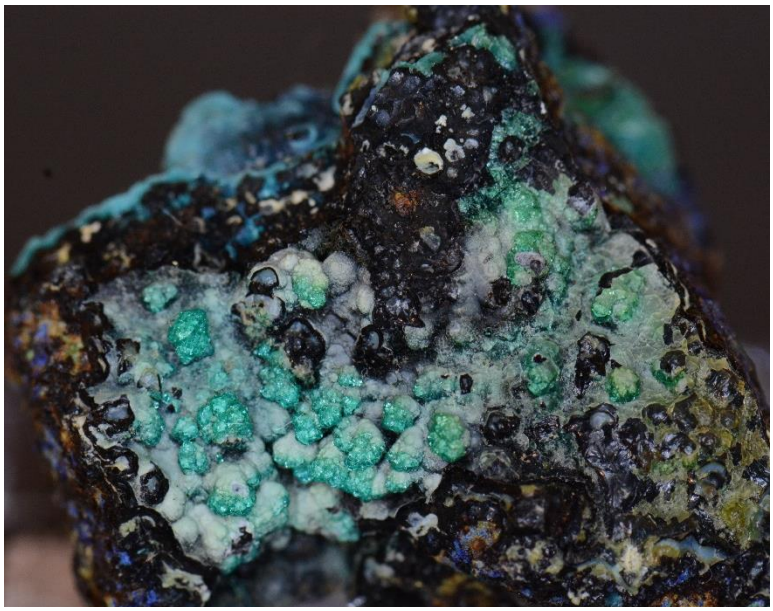
Happy May Day!

Northern Virginia Mineral Club members,

Please join our May speaker, Paul Kreingold, for dinner at the Olive Garden on May 20 at 6 p.m.

Olive Garden, Baileys Cross Roads (across from Skyline Towers), 3548 South Jefferson St. (intersecting Leesburg Pike), Falls Church, VA
Phone: 703-671-7507

Reservations are under Ti Meredith, Vice-President, NVMC. Please RSVP to me at ti.meredith@aol.com.



Chrysocolla from Orogrande, Otero County, NM, showing the variability in color from aquas to greens. Photo: Bob Cooke.

spertiniite in our collections! I could not find any further studies on this topic or confirmation of this one.

Chrysocolla typically forms botryoidal crusts, stalactites/stalagmites, or thicker massive rocks. It is common, occurring with other copper minerals in prospects and major deposits. It is therefore no surprise that chrysocolla is found as nice specimens from Peru, Congo, and Arizona. Some of the specimens from

Chrysocolla pseudomorph after azurite from Ray Mine, Dripping Spring Mountains, Pinal County, AZ. Photo: Bob Cooke.

Arizona and Peru display that lovely drusy quartz over chrysocolla that I mentioned previously. Cruise through the Mindat photo gallery of chrysocolla from Arizona's Ray Mine if you want a visual delight (see the Ray Mine Mindat gallery in the Sources below). The Whim Creek copper mine in Western Australia has produced nice chrysocolla pseudomorphs after azurite.

I've never seen *caveat emptor* (buyer beware) on Mindat, but when I looked up Eilat stone from Israel, I found that warning. Eilat stone is the National Stone of Israel, and it contains chrysocolla along with other copper minerals; however, green and blue rocks and stones sold in Israeli tourist shops are apparently imported from other countries.

The attractive blues and greens—and blue-greens—characteristic of chrysocolla are due to copper. Although copper is the first mineral in the chemical formula, chrysocolla is not a primary copper ore because the silica in chrysocolla makes the copper difficult to extract. Chrysocolla is primarily used for cabochons in jewelry. Some sources mention that the bluer chrysocolla tends to be softer and therefore less useful for jewelry. The harder, silicified material is preferred, often as a cheap substitute for turquoise.

Chrysocolla, botryoidal form, Planet Mine, La Paz County, AZ. Photo: Bob Cooke.

Chrysocolla is also used to give a name to otherwise unnamed or hard-to-determine rocks or minerals that are green, blue, or mixes of those colors, particularly if the color is a mere coating. I hope that you, along with me, have learned that chrysocolla is harder to define and not as simple as we thought.

So, here's a final surprise: Have you heard of yellow chrysocolla? I hadn't until I started research for this article. Have a look at the corresponding Mindat photo listed in the Sources. According to Mielke (2016), the color is likely due to iron.

Technical Details

Chemical formula..... $Cu_{2-x}Al_x(H_{2-x}Si_2O_5)(OH)_4 \cdot nH_2O$; $Cu_{2-x}Al_x(H_{2-x}Si_2O_5)(OH)_4 \cdot nH_2O$ ($x < 1$)
Crystal form ..... Orthorhombic

Fibrous chrysocolla, Eagle Eye Mine, La Paz County, AZ. Photo: Bob Cooke.

Hardness .....2.5–3.5; 7 if heavily silicified
Density.....1.93–2.4
Color.....Blue-green (aqua), green, blue, less commonly blue-black or brown, rarely yellow
Streak.....White to pale green or pale blue
Cleavage .....Irregular
Fracture.....Subconchoidal
Luster.....Vitreous, earthy, waxy

Sources

Farges, F.; Benzerara, K.; Brown, G.E. 2006. Chrysocolla redefined as spertiniite. 13th International Conference On X-Ray Absorption Fine Structure (XAFS13); July 9–14, 2006; Stanford, CA.
Gemdat. N.d. Chrysocolla.
Mielke, R. 2016. Mindat forum, 12 January. Mineral collecting in the Ural Mountains
Mindat. N.d. Chrysocolla.
Mindat. N.d. Chrysocolla, gallery images, Ray Mine.
Mindat. N.d. Yellow chrysocolla, gallery image.
Mindat. N.d. Photos of Eilat stone.
Minerals.net. N.d. The mineral chrysocolla.
Webmineral.com. N.d. Chrysocolla mineral data.
Wikipedia. N.d. Chrysocolla.
Wikipedia. N.d. Chrysocolla (gold-solder).

Paul Kreingold

The Lost History of Potomac Marble

May 20 Program

The destruction of Washington, DC, in 1814 by the invading British challenged President James Madison (1809–17) with the task of rebuilding the destroyed edifices. Like previous Presidents, Madison understood that the principal buildings of government were not mere offices but symbols of the aspirations of the Republic. The buildings had to be more than functional; they had to be beautiful.

As classicists, the American Presidents derived their notions of beauty from the ancient Greeks and Romans. Like the ancients, they preferred marble as a building material. Join Mr. Paul Kreingold at the NVMC meeting in May to learn where such a building material could be found near Washington, DC.

Potomac marble column in the National Capitol.

Mr. Kreingold was born in the Bronx in New York City and grew up in Queens, where he attended Queens College, majoring in history. He is a 35-year resident of Leesburg, VA, and has never regretted leaving New York.

After a 40-year career as a computer system designer, Mr. Kreingold decided that there was more to life and became a certified Virginia Master Naturalist in the Banshee Reeks Chapter of Leesburg. He is also the Conservation Director of the Loudoun County Chapter of the Izaak Walton League of America, a conservation organization with about 1,100 members locally. Mr. Kreingold has been married for 43 years and has two grown children who, thankfully, do not live at home. Mr. and Mrs. Kreingold are avid classical music lovers, have traveled widely, and dance the tango on a regular basis.

President's Collected Thoughts

by Sue Marcus, President

Thinking ahead. That's what Germaine's presentation to us was about at our April meeting. I'm thinking ahead about my collection and about short-term planning too.

Summer! Are you interested in a picnic and maybe a rock swap? Vice-President Ti Meredith has offered to host the event at her lovely home on Lake Jackson, near Manassas. We'll consider this possibility, so let one of the officers know if you are interested.

Also, further down the calendar, there's our show on November 23–24, 2019. The show is an annual highlight for the club and for most of us individually. Recruiting helps to make it happen and is always difficult. Tom Taaffe ably manages the negotiations with George Mason University and the dealers, along with most of the publicity, but there is lots more to do, such as staffing the Kids' Mini-Mines, the ticket table, and, of course, setup and takedown. *If* we have a Scouts program this year, we will need someone to lead it. We have time, so thinking ahead, as Germaine informed us, makes life easier for everyone. And this year, we'll have T-shirts to sell at the show!

Thinking ahead, I hope that you will join us to hear Paul Kreingold talk about Potomac marble. I'd guess that some of you have heard of it, maybe even collected it, and some are wondering where to find marble in this area. Join us to learn more of the story! (I might even mention a *Banshee* connection.)

Sue

Meeting Minutes
April 22, 2019

by President Sue Marcus on behalf of Secretary David MacLean

The NVMC meeting started at about 7:45 p.m. at the Long Branch Nature Center in Arlington, VA. Club members welcomed three visitors: Bob Fratkin, professional partner of our speaker Germaine Broussard; and Harrison and Norma de Beer, who hope to learn more about minerals and chemistry and join the club to go on field trips.

Since Secretary David MacLean was (we hope) enjoying a trip to Hungary, President Sue Marcus produced the meeting notes, with photographic help from Pat Flavin.

We recognized past President Barry Remer, then moved on to the night's program on estate planning for making sure that your collection is always handled in accordance with your wishes.

Germaine Broussard, who delivered a program on estate planning for mineral collectors at the April NVMC meeting. Photo: Pat Flavin.

Germaine presented a thought-provoking session on collections and what becomes of them. Sharing stories of collections and collectors she's met, she informed us of the importance of letting people know your wishes—preferably in writing and definitely where someone you trust knows where to find what you have written.

Of course, we focused on mineral and other collectibles, although Germaine mentioned other important matters that should be known to others, like where your passwords are and where to find important documents (such as your will, passport, medical history, and so on). She told horror stories and potential horror stories of collections being thrown out or given to a thrift shop because heirs, friends, and others had no idea of their value.

Germaine passed around some of her collectible geology-related materials that others might not recognize for what they are—like mineral spheres that could be purposed as balls for rolling. Germaine shared a set of forms that she's developed to help us identify important items and where they can be found. Ask Germaine at a club meeting if you'd like a copy.

Pat Flavin brought extra delight to our break when she cut the attractive, delicious cake she brought. Sorry—none left! If you weren't there, ask her about it at a future meeting.

After the break, we moved on to our business meeting. The minutes in *The Mineral Newsletter* for April were approved as published.

The main item of business was choosing a design for a club T-shirt. Several designs were shown, including some "advertised" in the April newsletter, along with the announcement that a vote would be conducted at this meeting. Pat Flavin modeled one of the options.

Discussion ensued on the designs, possible modifications, sizes, and so forth. The members selected a black shirt with minerals on the front, with the club name and (we hope) the club logo printed on the sleeve. Few members were present to vote, and one vote came by email, an option offered in the April newsletter. Another design may be selected in the future.

In other business, club Treasurer Roger Haskins was not present but Sue read his report out loud to the attendees. There was a brief discussion of options for safely investing club funds. Sue and Roger will continue to investigate; Tom Benedict offered ideas.

Club members offered advice about proper equipment and preparation for the Franklin/Sterling Super Diggg cohosted by the NVMC on April 27.

The meeting adjourned at about 9:30 p.m. ⛏

Possible Relocation of Volcano Observatory Raises Concerns

Editor's note: *The source is* U.S. News and World Report *(April 6, 2019). Thanks to Sue Marcus for the reference!*

Some have voiced concerns about the Hawaiian Volcano Observatory potentially moving off of the Big Island to Oahu.

The Observatory confirmed last week that Oahu is one option under consideration for a new home since the headquarters inside Hawaii Volcanoes National Park remains badly damaged from Kilauea volcanic crater collapses, the Hawaii Tribune-Herald reported on Friday. Other options include a new site within the park or on the University of Hawaii at Hilo campus. … *Read more*.

NVMC Bestows Schaefermeyer Award

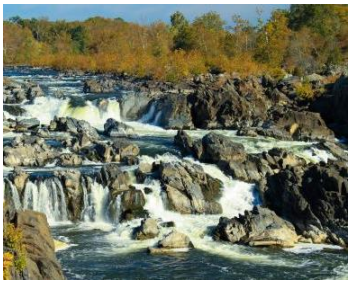
Rachel Patterson of James Madison University was awarded a Fred Schaefermeyer Scholarship for 2019 from the Northern Virginia Mineral Club. Dr. Cynthia Kearns selected Ms. Patterson, noting that she is an excellent student who works as a student assistant for the introductory geology labs and is wonderfully helpful, outgoing, and cheerful. She is a third-year geology major who will be researching minerals in fulgurites this coming summer. She joined Drs. Cynthia and Lance Kearns on a field trip to Franklin, NJ.

Save the dates!

Field Trip Opportunities

Northern Virginia Community College

NOVA's Annandale campus offers 1-day weekend courses—essentially, field trips—related to our hobby. You can get more information at the Field Studies in Geology—GOL 135 Website.



Geology of Great Falls Park, VA

May 20, 9 a.m.–6 p.m. Study the modern and ancient forces that created Great Falls National Park, including some easy to moderate hiking. Meet in front of NOVA's main Bisdorf entrance at 9:00 a.m.

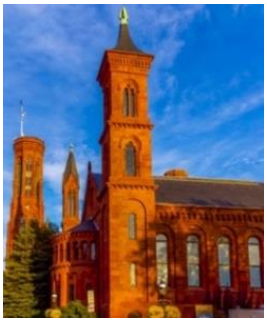
Miocene Geology of Calvert Cliffs, MD

June 1, 8 a.m.–6 p.m. Learn how the Miocene seas spread across Chesapeake Bay region 10–20 million years ago. We will visit the Calvert Marine Museum collections and study ancient sediments, stratigraphy, and paleoenvironments preserved in world-famous Calvert Cliffs, MD, collecting fossils along the way.

Triassic-Jurassic Rift Valley of Northern VA

June 22, 9 a.m.–7 p.m. Explore the geologic history of the famous Mesozoic rift basin, specifically across the Manassas, Leesburg, and Haymarket areas. Field stops will include quarry and roadside outcroppings of all rock types, dinosaur tracks, rift basin stratigraphy, and tectonic structures.

Building Stones of the National Mall



June 29, 9 a.m.–6:30 p.m. We will visit over 20 sites on the Washington Mall, examining the geologic history and architecture, including the rocks used to construct the federal buildings and monuments.

Audubon Naturalist Society

The ANS offers classes and nature programs, including short field trips. You can get more information and register at the ANS website.

Geology of Greenbrier State Park, MD

May 4, 9 a.m.–1 p.m. The cost of this field trip, led by Joe Marx, is $36 for nonmembers. Greenbrier State Park is located on the western slope of South Mountain, about 15 miles northwest of Frederick, MD. Its trails offer good exposures of three formations of the Blue Ridge Province: Antietam, Harpers, and Weverton. The Antietam is the source of the tube-shaped Skolithos fossils commonly seen in DC-area stream gravels. Because the Blue Ridge rocks are overturned within the park, walking uphill means walking backward in geologic time. Our 2-mile hike will be quite rocky and involve about 500 feet of elevation gain. Although we will proceed at a slower geologist pace than usual, it will still be a moderate to strenuous hike. Note that for day use, the park charges $3 per person for Maryland residents and $5 per person for nonresidents.

Geology of Leesylvania State Park, VA

May 19, 9 a.m.–1 p.m. The cost of this field trip, led by Joe Marx, is $36 for nonmembers. Leesylvania State Park sits next to the tidal Potomac about 5 miles south of Woodbridge, VA. Its sandy beach, sandstone cliffs, and upland gravel terraces illuminate the geological history of the Coastal Plain and of the Chesapeake Bay estuary. We will hike a loop of about 3 miles within the park over well-maintained woodland trails. The terrain is flat to gently rolling, with a couple of short steep sections. If there has been recent rain, the trail might be muddy at spots. The pace set and distance covered are usually faster and farther than our usual "naturalist's shuffle."

Writing Tip of the Month

The more you explain it, the less I understand it.

Mark Twain

Tribute

We Are Saddened by the Loss of Carolyn …

by the EFMLS

Editor's note: *The article is adapted from* EFMLS News *(April 2019), p. 1.*

Our hope by now is that you have heard that the Matriarch of the EFMLS, Carolyn Weinberger, passed away on March 25, 2019. She is now at peace after a long battle with a leukemia-related illness and was laid to rest on Friday, March 29. Please continue to keep Carolyn, Steve, and their families in your thoughts and prayers.

Carolyn was more than just a leader of our federation; she had her hands in just about everything regarding our hobby she could. She was active in Wildacres, the AFMS, the Desautels Micromount Symposium, the Baltimore Mineral Society, the Cheseapeake Gem and Mineral Society, the Gem Cutters Guild of Baltimore, and more. We won't go into the numerous awards she received.

This is more than a big loss, not just for us but for the extended mineral community. Carolyn's presence went far beyond the groups and activities she was involved in. She was a guiding presence, making sure that we follow guidelines and make everyone feel welcome and treated fairly.

Over the past few weeks, we have heard from so many folks whose lives have been touched by Carolyn. And we will continue to honor her in the future. Your federation will be publishing a special edition newsletter in the next few weeks to honor the legacy of Carolyn and her husband Steve. Acclaimed author of mineral publications Bob Jones will be publishing an article about Carolyn in *Rock & Gem* magazine in the coming month. Stay tuned! Throughout this EFMLS newsletter, we will be honoring Carolyn with tributes from her extended rock-and-mineral family.

Rest in peace, Carolyn.

Bench Tip: Stiffening Earring Posts

Brad Smith

Soldering an earring post will always soften the wire a bit. The easiest way I've found to harden it is to grip it with pliers and twist it a couple half turns. This work hardens the wire and also tests your soldered joint.

See Brad's jewelry books at
amazon.com/author/bradfordsmith

Safety Matters

You Are Being Watched

by Ellery Borow, AFMS Safety Chair

Editor's note: *The article is adapted from* A.F.M.S. Newsletter *(May 2018), p. 5.*

You are indeed being watched. While out on a club dig or field trip searching for some nice collectables, people are mostly looking at the hole they are digging or at the marvelous "sparklies" they are finding in the hole. But they are also looking at the people all around them to see what is going on nearby. So if you are near one of those intrepid diggers, you are being watched.

Are you setting a good example? Are you wearing appropriate footwear? Do you have on suitable pro-

tective garments? Might the safety goggles you are wearing be proper for the site? Gloves—are you wearing them? Seriously, people are watching you!

People often say that kids sometimes don't take instructions well. They are, after all, moving toward finding their own independence. Kids, however, are also little sponges, soaking up information about everything and everyone around them. Kids can't wait to be grownups and so are always watching adults, listening to what we are saying, looking at what we are doing, and noticing what we are wearing, all while pretending to ignore us. Kids are hungry for example setters and role models. Therefore, adults should be aware of the examples we set for the kids around us.

So I ask again: are you setting a good example for your kids and all the other kids around you? Even adults learn from those who set good examples.

Please consider: using personal protective equipment is great for you and your family, and it might also be setting a great example for those around you. So wear good footwear, proper protective clothing, gloves, and goggles, and keep those tools in good repair!

Be a trendsetter, a good example. As a bonus, you will be safer while helping other people learn to be safer as well! Your safety matters, as does everyone else's!

Humor?

Dirt Cake Recipe

by Tammy Hooper

Ingredients

1/2 cup butter, softened
1 (8-ounce) package cream cheese, softened
1/2 cup confectioners' sugar
2 (3.5-ounce) packages instant vanilla pudding mix
3-1/2 cups milk
1 (12-ounce) container frozen whipped topping, thawed
32 ounces chocolate sandwich cookies with cream filling

Directions

1. Chop cookies very fine in food processor. The white cream will disappear.
2. Mix butter, cream cheese, and sugar in bowl.
3. In a large bowl, mix milk, pudding, and whipped topping together.
4. Combine pudding mixture and cream mixture together.
5. Layer in flower pot, starting with cookies, then cream mixture. Repeat layers.
6. Chill until ready to serve.
7. Add artificial flower and trowel.

Enjoy!

GeoWord of the Day

chalybeate waters

Ferruginous waters—that is, mineral spring waters containing salts of iron. (The Latin word for steel is *chalybs*.)

(from Wikipedia)

Mineral stains from chalybeate waters at Rosedale Cliffs, England.

Rock and Gem Buying Techniques

Buying Lapidary Materials—Finished Objects

by Joe Iannucci

Editor's note: *This is the last in a series of articles from 1989–90 reprinted in the* Livermore Lithogram *(newsletter of the Livermore Lithophiles, Livermore, CA). The article is adapted from the December 2018 issue. The previous articles are in the February, March, and April issues of* The Mineral Newsletter.

Buying completed objects such as cabochons and carvings (I'll not talk about faceted stones) is the easiest way of buying lapidary materials. You see exactly what you will wind up with, and there's no having to guess about the quality of the material or its workmanship.

Well, that's sort of true. Dealers sometimes don't know exactly what they are selling you. A dealer might have been told it was jade, but it's really gem-quality serpentine! Or the opal may look good now, but it is from a location with opals that tend to fade or crack after a few days or months.

An informed buyer should ask lots of questions and listen especially hard to the answers. (You might even ask a question you already know the answer to in order to test the knowledge of the dealer, such as whether the material really came from South Africa.)

Cabochons should be examined to see whether they have been tumble finished rather than hand polished. Such stones will be beautiful, but they might be far off from the calibrated shapes you might need.

Carvings should be inspected for the quality of detailed work and the beauty of design. There are many inexpensive South American replicas of fine German carvings on the market. They are nice, but be sure that you are not paying German prices for lesser quality pieces.

As usual, a reputable dealer is the best guarantee of honesty and knowledge.

Top: *Cat's eye cabochons.* **Bottom:** *Turquoise carving. Source: Smithsonian National Museum of Natural History; photos: Chip Clark.*

The Rocks Beneath Our Feet

Santorini, Greece: Homes in the Rock

by Hutch Brown

Editor's note: *This is the last in a series of articles on Santorini. The other three articles are in the February, March, and April 2019 issues.*

Last summer, I visited the Greek island of Santorini on a vacation with my family to Italy and Greece. I had heard that the island was one of several volcanic remnants surrounding an ancient caldera, and we were amazed by the sweeping caldera vistas and the spectacular whitewashed vacation homes lining the rim of the caldera walls, a thousand feet above the Aegean Sea.

We had made our arrangements late, and one of the few remaining places for rent in the town of Oia (pronounced "EE-uh") was a cave carved into the caldera wall. I had heard of such places; some years ago, club President Sue Marcus wrote in the newsletter about her vacation stay in a comfortable apartment carved into a limestone wall in France.

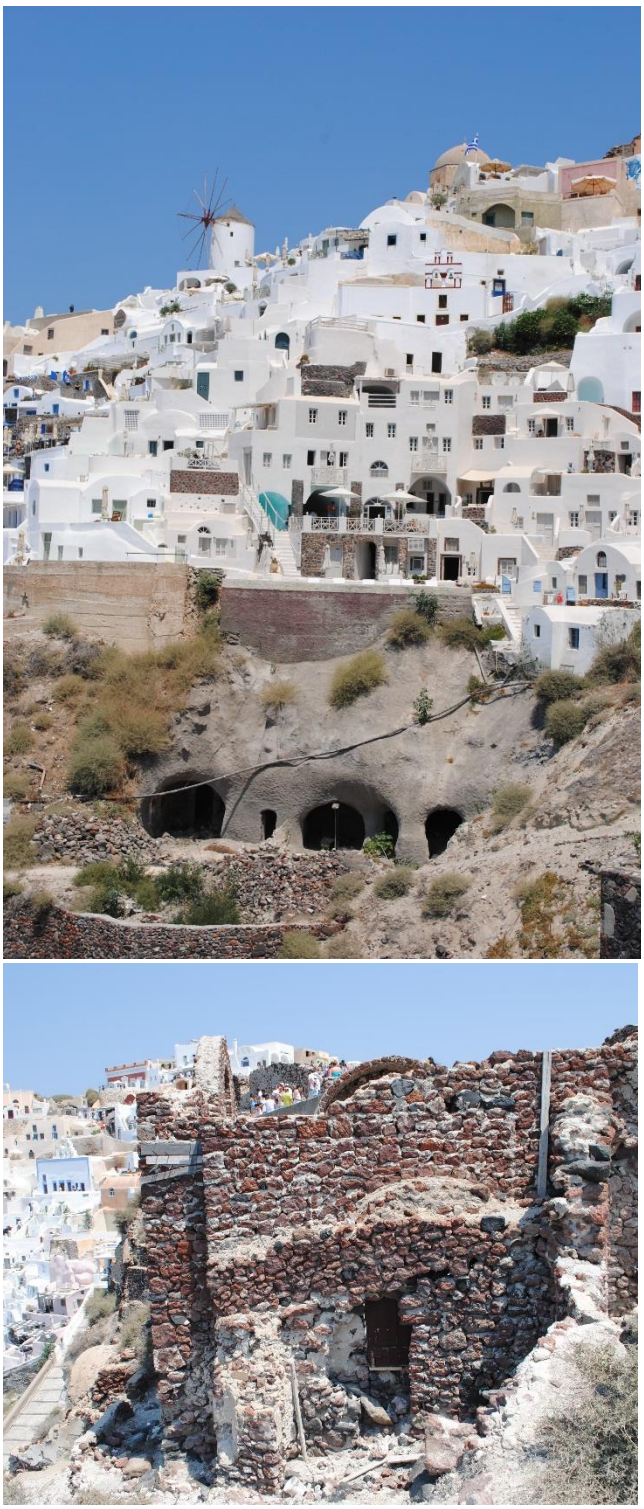
So I was naturally curious. And it turned out to be fantastic!

Tuff Bedrock

The bedrock on most of Santorini is tuff—consolidated volcanic ash, pumice, and scoria. Pumice and scoria both formed from what geologists call pyroclastic flows: volcanic eruptions that spewed gases and hot ash into the atmosphere and emitted frothy liquid (rather than viscous) lava.

Pumice is light in weight and color, made up mainly of quartz and feldspar; it actually floats in water. Scoria is heavier and darker in color, with more calcium, iron, and magnesium oxides. On Santorini, the corresponding volcanic rock types are light-colored rhyolite and gray or red andesite (rarely basalt).

The inhabitants of Santorini have long used volcanic tuff, which is relatively soft, as building stones. The Romans did the same—we saw great blocks of tuff in the Colosseum in Rome, for example, and in one of the outlying aqueducts. The columns in Pompeii are made of tuff, and the catacombs outside Rome are underground caverns carved into the tuff for Christian tombs (because real estate for burial grounds was scarce in densely populated ancient Rome).



Top: *The town of Oia on Santorini, with whitewashed vacation homes and manmade caves used for storage.* **Bottom:** *Part of the medieval Venetian fortress ruins overlooking the port of Ammouni. The fortress was built from reddish tuff; the Oia homes in the background have the same tuff walls under their modern stucco and whitewash. Photos: Hutch Brown.*

Most of Santorini looks like this—fertile farmland sloping down to the Aegean Sea, with terracing toward the caldera walls (from where the photo was taken). Photo: Hutch Brown.

Figure 1—*Abandoned cave dwellings on the slopes below Oia on Santorini above the caldera. Photo: Hutch Brown.*

Most of Santorini—on the Aegean side of the island—slopes gently down to the sea. It is good farmland, with fertile soils of volcanic ash and low buildings made from blocks of tuff. Where the terrain gets steep toward the caldera walls, farmers build terraces.

Everywhere, there are grapes. Santorini is known for its exceptional wine, which we found surprisingly good (and expensive).

Who knew that the Greeks make great wine?

Cave Dwellings

But on the western side of the island, nearly vertical walls rise from the caldera. If you want to build there, it makes more sense to excavate the tuff and use the resulting caves for storage or even for homes.

We saw ancient evidence of both.

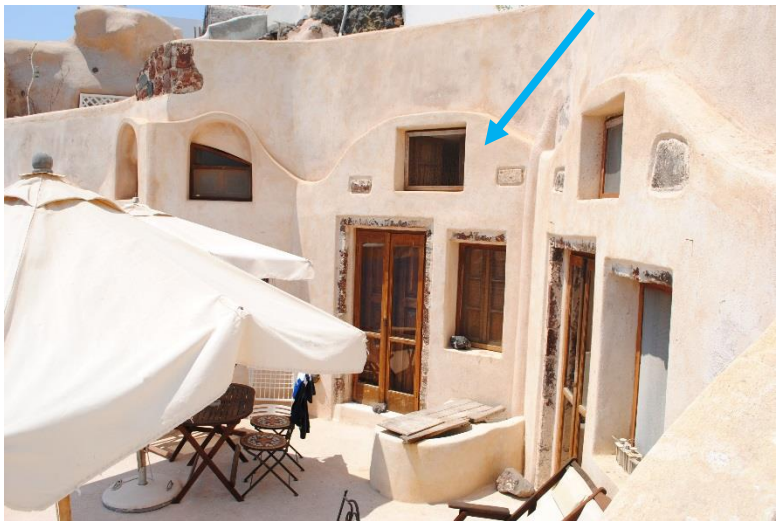
In Oia itself, from the unit we rented, we could see caves carved into the caldera wall (fig. 1). We were told that fishermen once lived there, but that seemed unlikely to me because from there it's a 900-foot vertical drop to the sea.

But maybe they were poor fishermen in cheap accommodations. Maybe they made their way each day down to the nearby port of Ammouni, a walk of an hour or so up over the caldera wall and down the other side.

We took a daylong hike from the administrative center of Fira, the island's largest town, back to our rental unit in Oia. On the way, we crossed the neck of the Oia peninsula (fig. 2), where we saw more manmade caves on the caldera side of Santorini.

We were told that it was an ancient monastery. The terrain is just as bleak as it looks and so much steeper than it looks that it's entirely believable: few would be tempted to go bother the monks, who in turn would be blessedly safe from worldly temptations.

Figure 2—*Abandoned cave dwellings on the neck of the Oia peninsula, reportedly an ancient monastery. Photo: Hutch Brown.*



Our rental unit on Santorini (center, arrow), with French doors. The unit was excavated from the tuff in the caldera walls. Photo: Hutch Brown.

View of the Santorini caldera from our rental unit veranda. Photo: Hutch Brown.

Our Rental Unit

To get to our rental unit, we had to pass through the town of Oia and descend through steep walkways, almost to where the whitewashed structures end on the caldera walls. About a hundred feet below the rim of the caldera, we finally reached our cave.

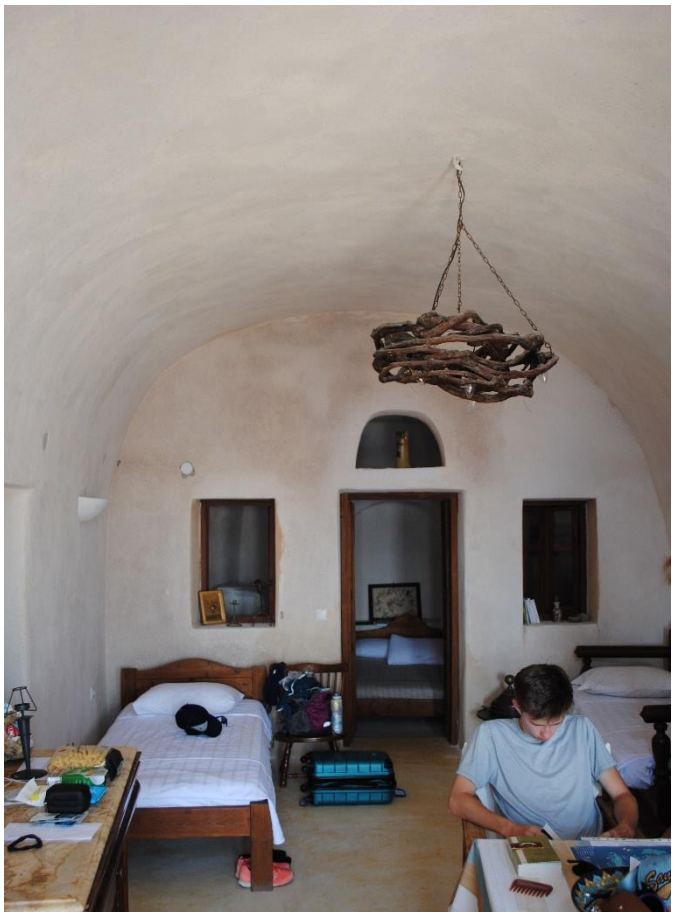
And that is literally what it was—an excavation in the white Minoan tuff. The walls of the unit, like most walls in Oia, were faced with what appears to be smooth limestone stucco and then nicely white-washed (although the color in this case was pink).

There was a unit next door, and each unit had its own outdoor table with chairs and an umbrella. We shared the veranda, with fabulous views of the caldera.

Because the unit was so far down the wall of the caldera, there were few homes below, which improved the view. The tradeoff was a long and steep uphill climb to get back to the heart of town, where the shops and restaurants are located.

Our unit had French doors and multiple windows that let in plenty of light. Most of the space was taken up by two large rooms with vaulted ceilings. The floors were bare rock but clean and free of dust.

The first room had a living area and two twin beds, perfect for our kids. The second room was behind the first room, so it got little natural light, but it was a comfortable bedroom with a kingsize bed.



The main room had a living area in front and a sleeping area in the rear, with two twin beds. It led to a large bedroom in the back. (Author's son on his usual device). Photo: Hutch Brown.

The kitchen and bathroom were small side rooms in the front. Each had windows and got plenty of light. Both were perfectly adequate, at least for us.

Unless we were out and about, we spent most of our time out on the veranda soaking up the sun and enjoying the spectacular views. We even had our own private veranda carved from the tuff on the "roof" of our cave!

We were all very happy with our accommodations, but our neighbor one night was not. A couple on honeymoon had taken the unit next door, and the bride must have envisioned a plush hotel, not a cave. So lots of angry screams and tears!

Replete With Cats!

Oia has cats and dogs—lots of them. The cats are feral but depend on human handouts. People readily feed them.

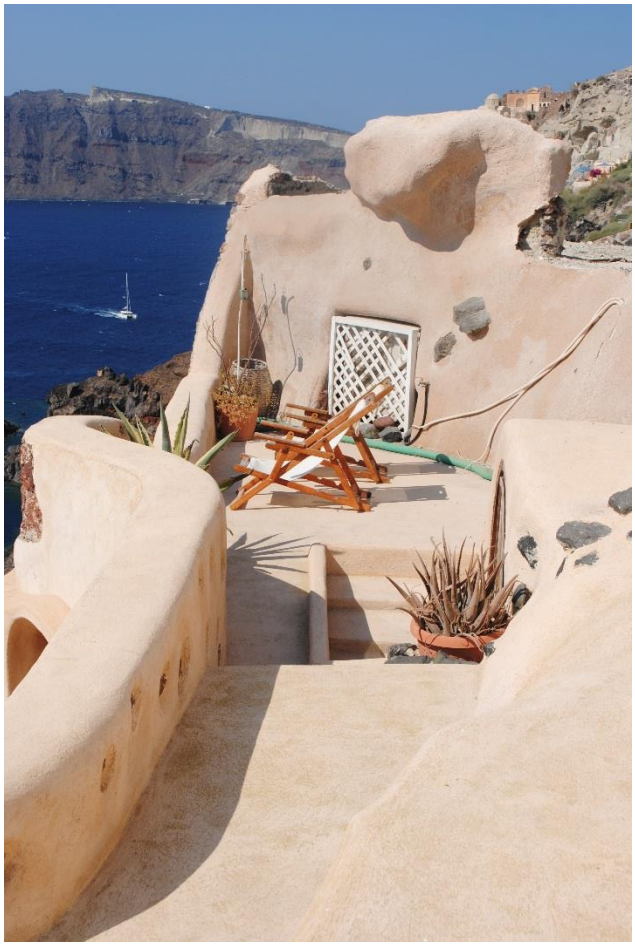
The cats are smaller than average, maybe because of the limited food. At any rate, they clearly love people and thrive on human affection.

We have cats at home, so hanging out with the Greek cats was an added plus.

Sources

Pfeiffer, T. 2004. Geology of Santorini. Volcano Discovery.

Plummer, C.C.; McGeary, D. 1996. Physical geology with interactive plate tectonics. Dubuque, IA: Wm. C. Brown Publishers.



Our rental unit had its own private veranda with great views from the "roof" of the cave. Photo: Hutch Brown.

One of several feral cats that spent time with us on our veranda. Photo: Hutch Brown.

The steep and narrow walkway to and from our rental unit in Oia. Photo: Hutch Brown.

May 2019—Upcoming Events in Our Area/Region (see details below)

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1 MSDC mtg, Washington, DC	2	3	4
5	6 GLMSMC mtg, Rockville, MD	7	8	9	10	11 Show: Towson, MD
12 **Mother's Day**	13	14	15	16	17	18
19	20 **NVMC mtg, Arlington, VA**	21	22 MNCA mtg, Arlington, VA	23	24	25
26	27 **Memorial Day**	28	29	30	31	

Event Details

1: Washington, DC—Monthly meeting; Mineralogical Society of the District of Columbia; 7:45–10; Smithsonian Natural History Museum, Constitution Avenue lobby.

6: Rockville, MD—Monthly meeting; Gem, Lapidary, and Mineral Society of Montgomery County; 7:30–10; Rockville Senior Center, 1150 Carnation Drive.

11: Towson, MD—30th Annual Chesapeake Gem, Mineral & Fossil Show; Chesapeake Gem & Mineral Society; Ruhl Armory, 1035 York Rd; 10–4; free admission; info: chesapeakegemandmineral.org.

20: Arlington, VA—Monthly meeting; Northern Virginia Mineral Club; 7:45–10; Long Branch Nature Center, 625 S Carlin Springs Rd.

22: Arlington, VA—Monthly meeting; Micromineralogists of the National Capital Area; 7:45–10; Long Branch Nature Center, 625 S Carlin Springs Rd.

Chrysocolla, Ray Mine, Dripping Spring Mountains, Pinal County, AZ. Small stalactites spill out of pocket cavities to drape the outside areas with a thin coating of chrysocolla. Source: Wikipedia; photo: Rob Lavinsky.

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THE NORTHERN VIRGINIA MINERAL CLUB INC
Crystals are the flowers of the Mineral Kingdom

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Mineral of the Month: Chrysocolla

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The Northern Virginia Mineral Club

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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; $15 individual, $20 family, $6 junior (under 16, sponsored by an adult member).

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 7:45 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 August.)

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