



The Mineral Newsletter

Meeting: February 24 Time: 7:45 p.m.

Long Branch Nature Center, 625 S. Carlin Springs Rd., Arlington, VA 22204



Lepidolite

**Himalaya Mine, San Diego
County, CA**

Photo: Bob Cooke.

Deadline for Submissions

February 20

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

Volume 61, No. 2

February 2020

Explore our [website!](#)

February Meeting Program:

Virginia Mineral Project Update

(details on page 4)

In this issue ...

Mineral of the month: Lepidolite	p. 2
February program details	p. 4
President's collected thoughts	p. 5
January club meeting minutes	p. 5
Club scenes from 2019	p. 9
Latrobe's Potomac marble quarries	p. 10
Field trip opportunities.....	p. 16
2019 federation convention dates	p. 16
AFMS: Quartzsite history	p. 17
EFMLS: Safety matters.....	p. 18
Strawberry quartz.....	p. 18
Upcoming events	p. 19



Mineral of the Month Lepidolite

by Sue Marcus

Micas can be novel, interesting, and beautiful. Purple, lavender, and pink are fun colors, and lepidolite is the mica group mineral that comes in these colors.

Lepidolite was named relatively recently, in 1792, perhaps because it was not as obviously useful or easily worked as minerals used in more ancient times. German chemist Martin Heinrich Klaproth named lepidolite after the Greek words for scale (*lepidos*) and stone (*lithos*).

That leads me to think of other words I know with “*lepidos*” in their names for the same reason, such as Lepidoptera (butterflies and moths) or Lepidodendron (extinct “scale trees”).

Klaproth investigated many mineral materials. He discovered two elements, uranium and zirconium, and he codiscovered, provided confirming chemical analysis, or named beryllium, cerium, chromium, strontium, tellurium, and titanium.

Is lepidolite a mineral? For the purposes of this article, I’m going with yes. However, as analytical techniques and equipment have improved and been used over time, more data have emerged. That’s led to distinctions where previously there were none.

Lepidolite had or has, depending on your source, the following chemical formula:

- $\text{KLi}_2\text{Al}(\text{Al},\text{Si})_3\text{O}_{10}(\text{F},\text{OH})_2$ (Gemdat.org);
- $\text{K}(\text{Li},\text{Al})_3(\text{Al},\text{Si},\text{Rb})_4\text{O}_{10}(\text{F},\text{OH})_2$ (Wikipedia); or
- $\text{KLi}_2\text{Al}(\text{Si}_4\text{O}_{10})(\text{F},\text{OH})_2$ to $\text{K}(\text{Li}_{1.5}\text{Al}_{1.5})(\text{AlSi}_3\text{O}_{10})(\text{F},\text{OH})_2$ (Mindat.org).

Mindat states that lepidolite is now a series between polyolithionite and trilithionite (the last two preceding formulas, respectively). Wikipedia is the only source that includes rubidium (Rb) in the chemical formula.

After I’d written most of the article and was trying to resolve the issue of the confusing formulas, I checked the International Mineralization Association’s list of approved minerals—and lepidolite isn’t there! So the lepidolite that we grew up with is now a group of two. My collection started before the split, and I do not have access to the equipment necessary to differentiate between the two species in the minigroup. My

Happy Valentine's Day!



Northern Virginia Mineral Club members,

Please join our February speaker, Thomas Hale, for dinner at the Olive Garden on February 24 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.



Lepidolite with boromuscovite from the Little Three Mine, San Diego County, CA. Source: Wikipedia; photo: Rob Lavinsky.

labels will therefore remain “Lepidolite.” I leave your choice up to you.

Although lepidolite is the lithium-rich member of the mica group, its coloration comes from manganese, not lithium. Lithium, along with other volatile elements like fluorine and boron, helps control the cooling of the fluids that solidify into pegmatite. These volatile elements are concentrated at the end of the cooling period, leaving them to form late-stage minerals like lepidolite and other beautiful pegmatite minerals.



*Lepidolite on tourmaline from the Dunton Mine, Newry, ME.
Photo: Bob Cooke.*

Accordingly, lepidolite is found in pegmatites, the very coarse-grained rocks of granitic composition that host a wealth of interesting minerals. Massive or sub-crystalline lepidolite often forms the matrix for more valuable or sought-after minerals like tourmaline of diverse species or members of the beryl group. “Euhedral” crystals show obvious crystal faces, with most faces present and unattached to other minerals. Euhedral lepidolite crystals are relatively rare, although balls of lepidolite scales are an interesting addition to any collection.

The type (original) specimens came from the Rožná pegmatite in what is now the Czech Republic. My favorite (and a very well known) lepidolite locality is the Stewart Mine, one of several localities in San Diego, CA. I’ve collected massive lepidolite there, with some specimens containing tiny (in my collecting experiences) blades of red rubellite tourmaline. Specimens with stunningly large and beautiful rubellite crystals are also found there (by others!).

Other San Diego County mines noted for lepidolite are the Himalaya and Little Three Mines. Mount Apatite and Mount Mica in Maine are well-known pegmatite localities that have also produced lepidolite, as have the Gillette and Strickland Quarries in Connecticut. The Black Hills of South Dakota and the Brown Derby Mine in Colorado also host pegmatites that have lepidolite.

Any pegmatites with lithium probably contain lepidolite. The top mineral-specimen-producing pegmatites are in Afghanistan/Pakistan and Brazil.

Brazil is probably the best source of simple lepidolite. Minas Gerais, with its fabulous gem-producing pegmatites, also has lepidolite, sometimes as a matrix for the gems. For a fun virtual trip (cheap too), look at the Mindat images of lepidolite from Itinga, Minas Gerais. You will see beautiful yellow specimens (such as on page 19), along with pink lepidolite replacing tourmaline. Wouldn’t an attractive yellow lepidolite be an interesting addition to a collection?

Then there are the specimens of zoned lepidolite. These can be lepidolite surrounding muscovite from Barra do Salinas, also in Minas Gerais. Many zoned specimens are cleavages that show quite distinct crystal faces—pretty cool for color and morphology!

Paprok and Peech in Afghanistan are known for lepidolite. I was also lucky enough to collect lepidolite at the Tanco Mine in Manitoba, Canada.

Lepidolite has been mined for lithium, although cheaper sources are currently preferred. Lithium is the lightest metal—lighter than aluminum. Most lithium produced is used for batteries, with some going into ceramics (due to the high melting point of lithium), lubricants, and other minor uses. Lithium can be



*Lepidolite from the Himalaya Mine, San Diego County, CA.
Photo: Bob Cooke.*



*Lepidolite from the Himalaya Mine, San Diego County, CA.
Photo: Bob Cooke.*

alloyed with other light metals like aluminum and magnesium for aerospace and other technologies that require—and can afford—very light metals.

Fine-grained lepidolite can be cut and polished. We have a lovely sphere of lepidolite from Pakistan; lepidolite can be carved into animals or eggs.

Gemdat.org states that translucent lepidolite material can be faceted but shows no examples. Writing these articles involves research, and when I searched the web for images of faceted lepidolite, lo and behold, I found a lovely semitranslucent pale yellow stone for sale. Because the seller said that the stone came from Brazil, I suspect it was from Itinga. I've included the link in the references below.

Other images were “faceted” lepidolite, with very intentional quotation marks, meaning that massive lepidolite had indeed been cut into regular faces, though without precision to the cuts or the specific angles one would expect with a faceted stone like the one from Brazil.

Perhaps a new collection—odd faceted stones?

Technical Details

Crystal form.....Monoclinic
Hardness2.5–3
Density.....2.8–2.9 (Mindat)

Color.....Lighter shades of purple
(lavender, lilac); pink; less often white, yellow, gray, or colorless
Cleavage.....One perfect (micaceous)
FractureBrittle, uneven
Luster.....Pearly, vitreous
Streak.....White ↗.

Sources

Gemdat. N.d. (no date). [Lepidolite](#).
Gemgazer. N.d. [Lepidolite, yellow faceted, Brazil](#).
Mindat. N.d. [Lepidolite](#).
Mindat. N.d. [Lepidolite: Barra do Salinas, Minas Gerais, Brazil](#).
Mindat. N.d. [Lepidolite: Itinga, Minas Gerais, Brazil](#).
Minerals Education Coalition. N.d. [Periodic Table of the Elements](#).
USGS. N.d. [Commodity statistics and information](#).
Webmineral. N.d. [Lepidolite mineral data](#).
Wikipedia. N.d. [Aluminium-lithium alloy](#).
Wikipedia. N.d. [Lepidolite](#).
Wikipedia. N.d. [Martin Heinrich Klaproth](#).

Next month: Colemanite! If you have photos to illustrate the article, send them to Hutch Brown at [edi-tor@novamineral.club](mailto:editor@novamineral.club).

Thomas Hale Virginia Mineral Project Update February 24 Program

Thomas Hale, founder of the Virginia Mineral Project, is back to update the NVMC on the progress of his project since last year.

Since his previous talk, the Virginia Mineral Project has developed under nonprofit status and is taking the next step in preparing a new book on classic mineral localities of Virginia. Thomas will talk about the future of the project, giving us insights into the contents of the book and the project's exciting plans for 2020 across Virginia.

Having just returned from Tucson, Thomas will also share some stories and photos from the largest gem and mineral show in America!

If you have Virginia specimens, old documents, or photographs, please bring them to show everyone at the meeting. ↗.



President's Collected Thoughts

by Tom Burke, President

The January meeting was relaxed and fun. We had a show-and-tell session, and we were lucky to have several experts available to help with mineral identification.

I want to give a shout-out to the Virginia Mineral Project, led by Thomas Hale. The motto of the project is "Collect. Preserve. Educate.", with the goal of preserving the rich history of mineral discovery and application in the Commonwealth. To accomplish that goal requires bringing together the knowledge and experience of a wide range of people. Many of us have something that we could contribute, to the benefit of us all, so please help however you can.

While the end product is intended to be a book that updates and expands previous recorded histories, an immediate benefit is the collection of information that we can all use now. In particular, the project will soon release a directory detailing the many clubs, rock shops, and related museums throughout the state. The directory will be freely distributed, and I'm sure that even the experts among us will learn something interesting and useful from it. For newbies like me, it will really help jumpstart our introduction to this hobby.

As updates are released by the project, I will make sure that everyone in our club knows about them. You can also follow the project by going to the website <https://virginiamineralproject.org>. That address currently links to the project's Facebook page, but you can view the information there even if you are not a Facebook member. Eventually, the same address will be a repository for the project's collected information, with no requirement for outside sites like Facebook.

Thomas gave a fascinating and inspiring talk on the project during our October meeting, and attended the January meeting to give a brief update. He will be the featured speaker for our February 24 meeting, so please be sure to attend and learn more about this wonderful resource. ↗

Tom

Annual GLSMC Show Coming Up!

The 56th Annual Gem, Mineral and Fossil Show, hosted by the Gem, Lapidary and Mineral Society of Montgomery County, MD, is coming up on March 22–23. The hours are Saturday from 10 to 6 and Sunday from 11 to 5. The location is Montgomery County Fairgrounds, Building 6, 16 Chestnut Street, Gaithersburg, MD. There will be over 40 exhibits, activities for kids, and over 20 dealers from around the country. Admission is \$6 for adults, kids 11 and under free.

Membership Fees Due for 2020!

Club membership fees for 2020 are due! The fees are \$20 individual and \$25 family. For a family membership, please include the [form](#), listing all family members. You can see Treasurer Roger Haskins at our monthly meeting or send your dues to him at 4411 Marsala Glen Way, Fairfax, VA 22033-3136. If you send a check, please make it payable to Northern Virginia Mineral Club.

Meeting Minutes January 27, 2020

by Hutch Brown on behalf of David MacLean, Secretary

President Tom Burke called the meeting to order at 7:50 p.m.

Introductions

The president recognized guests Norma and Craig De Beer as well as Orion and Abyssinia Jurkowski. The president also recognized Thomas Hale, who spoke briefly about the Virginia Mineral Project (VMP) and will be our speaker in February (see page 4).

Former president Barry Remer was in attendance.





Door prize winner Abyssinia Jurkowski. Photo: Julia Burke.

Recently joined members introduced themselves, including Brynne Mortellaro as well as Laura Kendall and her son Garrett (age 12).

Newly elected president Tom Burke introduced himself, as did newly named club photographer Julia Burke. Other members in attendance went on to introduce themselves as well, explaining their interests in our hobby. Interests included fossils, lapidary, geology, mineralogy, and the self-collection and identification of rocks and minerals.

Door Prizes

Door prize winners included Harry De Beer, Garrett Kendall, Laura Kendall, Abyssinia Jurkowski, and Craig Rice.

Announcements

Members noted that those with lapidary interests can find a lapidary group in Silver Spring, MD. A lapidary element will also be in the upcoming show by the Gem, Lapidary and Mineral Society of Montgomery County in Maryland (for information on the show, see page 5).

For those interested in fossils, Barry Remer pointed out that Purse State Park on Wades Bay in Maryland

is a good collecting site. The park is located on the Potomac River estuary south of Fort Washington.

2020 Calendar

Members discussed club meeting dates for the year (normally the fourth Monday of each month) in view of possible conflicts with holidays. Tentative club meeting dates are February 24, March 23, April 27, May 18 (due to a conflict with Memorial Day), June 22, September 28, October 26, and December 14 (for the holiday party before Christmas). Club auctions are scheduled for the March and September meetings.

The November club meeting date is always tricky. The last week in November is Thanksgiving week, and the club meeting is normally on the Monday before the annual club show. Tentative dates are November 16 for the club meeting and November 21–22 for the club show.

Show and Tell

Several members displayed self-collected and other rocks and minerals. Thomas Hale and Alex Venzke helped with the identification.

Brynne Mortellaro brought rocks from gravel bars on Goose Creek, a tributary of the Potomac River in Loudoun County, VA. At least some of the rocks appear to be an intergrowth of white quartz with green serpentine, with some of the serpentine having weathered out to leave striations of quartz.

Harry De Beer (who suggested a free graphics software called Canva for the newsletter) brought a large



Craig Rice showing specimens from the collection he inherited from his father. Photo: Julia Burke.



Club member show and tell, with Thomas Hale (right) and Alex Venzke (lower left) helping Craig Rice identify specimens.
Photo: Julia Burke.

piece of light yellow-orange quartz collected in his own backyard in Fairfax County, VA.

Norma De Beer brought a ring obtained in Saudi Arabia featuring a beautiful purple gem. It might be alexandrite, a form of chrysoberyl (BeAl_2O_4) that can change color in different kinds of light.

Craig Rice brought specimens from the large collection he inherited from his father, who lived in the Seattle area. Craig was looking for help with identification. The specimens he brought included a large piece

Share Your Story in the Newsletter!

Club members appreciate reading stories by other club members, whether it's about a trip they took, a rock they found, or a specimen they acquired.

Every show-and-tell story can easily be turned into an article, no matter how short or long. editor Hutch Brown can help you formulate your piece. You don't have to worry about style, grammar, and so on.

So why not share your story with everyone? Just write it up and send it along with a photo of your trip or specimen to Hutch Brown at hutch-brown41@gmail.com.

of obsidian; rounded concretions of sedimentary rock, perhaps siltstone or mudstone; a homemade kit for testing hardness; petrified wood; muscovite; and mica schist with actinolite.

From northwestern Pennsylvania, Germaine Broussard brought large pieces of brown mudstone containing marine fossils. She also showed a piece of bright blue cavansite on stilbite from India as well as Christmas ornaments that look like peacock ore.

Thomas Hale and Alex Venzke brought a boulder-sized piece of pegmatite broken from a deposit in Bedford County in southwestern Virginia. The specimen contained a beryl crystal (aquamarine) a few inches in length, along with several dark brown garnets as well as white feldspar, smoky quartz, and sheets of dark mica. Alex also brought a colorful specimen of turgite (goethite and hematite) and a colorless quartz crystal with an unusual inclusion of dirt rather than water.

Virginia Mineral Project

Thomas Hale spoke briefly about the VMP in anticipation of his planned update on the project at the February club meeting. The project's purpose is to draw public attention to Virginia's rich legacy of mineral resources. Publications on the minerals of Virginia are 30 or more years out of date, and they reflect the black-and-white photography of a bygone era.

Through the VMP, Thomas is reaching out to rock shops, quarries, museums, clubs, and field trip coordinators across Virginia to collect information about Virginia minerals, including photos. He is compiling a book about classic localities in Virginia and wants to get communities involved in preserving the history of minerals in the state.

Thomas asked members to bring Virginia minerals, sources, and stories to the February meeting. Members can follow the VMP through daily Facebook posts. ➤

How to Write Good

Avoid alliteration. Always.

(From plainlanguage.gov, a federal website about plain writing.)

47th Annual Atlantic Micromounters' Conference

Who: Micromineralogists of the National Capital Area, Inc.

When: April 3–5

Where: Holiday Inn Express, 6055 Richmond Hwy, Alexandria, VA 22303

What: *Speakers*—Michael Pabst, Scott Duresky, Steve Stuart, Michael Seeds

Special recognitions—John Ferrante, PA; Erich Grundel, NY

Private tour—Victor Yount's mineral collection

Lunch, silent & live auctions, geo fellowship

Advance registration \$30, Door \$35.

Info, registration form: [click here](#)

Video

Minerals: The Overlooked Foundation of Our Future

by National Mining

Editor's note: The source is YouTube, November 13, 2019. Thanks to Mike Kaas for the reference!

Minerals are the critical foundation of our technology, defense, energy, and manufacturing supply chains. But the industry's importance is often overlooked by consumers who take for granted that certain materials will always be available in abundant supply. The raw materials from U.S. mines are critical to advanced technologies and countless other essential industries. As demand increases for the minerals that help power our increasingly tech-heavy world, access to those natural resources must grow along with it. ...

[Watch the video \(2 minutes\)](#). ↗

West Virginia Was Once a Seabed Making Salt From an Ancient Underground Ocean

by Eric J. Wallace

Editor's note: The piece is adapted from Pocket Worthy. Thanks to Sue Marcus for the reference!

Each morning, chef-turned-saltmaker Nancy Bruns leaves her home in downtown Charleston, WV, and drives southeast past the domed capitol building alongside the Kanawha River. Past the city, houses thin out and rocky hills rise up on either side of the river. The road passes under Interstate Highway 64 before dropping into the little river-fronting community of Malden. Just outside town, Bruns passes her cousin's pastures, which are full of heritage breed Belted Galloway cattle, and turns into the gravel drive of her company, the J.Q. Dickinson Saltworks. ... [Read more](#).

Where all the club T-shirts went ...



Germaine's collection of "Rockpuppies" in club T-shirts. Top to bottom, spiraling down from upper right, are: Eudoxie, Chris, Jennifer, Jaiden, Savannah, Miranda, Lucas, and Julian. Photo: Germaine Broussard.

Selected club scenes from 2019 ...



Spring club meeting auction.

Mining for Minerals kids' booth at the annual AIME (American Institute of Mining, Metallurgical, and Petroleum Engineers) event in Washington, DC.



Schaefermeyer Scholarship awarded to James Madison University student Rachel Patterson by Dr. Cynthia Kearns.



Collecting at the Vulcan Quarry in Manassas, VA.



Holiday Party, December 2019.

Colorful mineral offerings at the NVMC/GMU show, November 2019.

Benjamin Latrobe's Potomac Marble Quarries

by Paul Kreingold

Editor's note: Paul Kreingold, who lives in Leesburg, VA, is the conservation director of the Loudoun County chapter of the Izaak Walton League of America and a Virginia Master Naturalist. He gave a presentation titled "Lost History of the Potomac Marble" at the May 2019 NVMC meeting. This is his followup article.

The destruction of Washington, DC, in August 1814 by the invading British during the War of 1812 challenged President James Monroe and architect Benjamin Latrobe with the task of rebuilding the destroyed edifices.

Like former Presidents George Washington and Thomas Jefferson, they understood that the principal buildings of the government were not mere offices but symbols of the aspirations of the Republic. They had to be more than functional: they had to be beautiful.

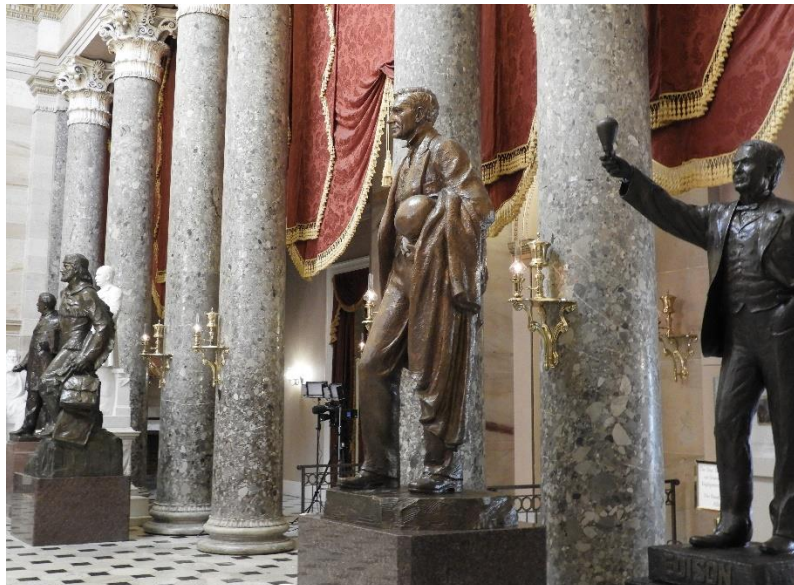
As classicists, their notions of beauty derived from the ancient Greek and Roman civilizations. Like the Greeks and Romans, they preferred marble as a building material. The question was: Where was such a building material to be found?

"Hard but Beautiful Marble"

In a report to the Committee on Public Buildings on November 28, 1816, Benjamin Latrobe described a stone that is a "very hard but beautiful marble" and that "has been proved to answer every expectation that was formed, not only of its beauty, but of its capacity to furnish columns of any length, and to be applicable to any purpose to which colored marble can be applied" (Latrobe 1816).

"The quarries," Latrobe continued, "are situated in Loudoun county, Virginia and Montgomery county, Maryland."

Latrobe was describing Potomac marble, a ubiquitous limestone conglomerate with deposits stretching from south of Leesburg, VA, to the shores of the Potomac River in Montgomery County, MD. The rock is not actually marble (metamorphosed limestone) but rather a sedimentary conglomerate consisting of pebbles of various sizes and composition (clasts) held together by a limestone (calcium carbonate) matrix.



Potomac marble columns in the Old Hall of the House in the Capitol.
Photo: Paul Kreingold.

Latrobe ultimately used Potomac marble for the columns in the Capitol's Old Hall of the House.

The unique characteristic of this marble is its color. According to Latrobe, "as the Cement which unites the pebbles does not receive quite so high a polish as the pebbles themselves, the Mass acquires a spangled appearance, which adds greatly to the brilliancy of its effect" (Latrobe 1817a). Visitors to the Old Hall of the House (National Statuary Hall) can still marvel at the beauty of these columns, now 200 years old.

Loudoun and Montgomery Counties

The investigator who searches for the remains of the Potomac marble quarries "in Loudoun county, Virginia and Montgomery county, Maryland" will be quite frustrated because the specific locations were never revealed by either contemporaries or those who later wrote about them.

The mystery starts quite early. For example, Latrobe's contemporary Samuel Lane, the commissioner of public buildings, listed a disbursement dated May 21, 1816, for \$16.00 for "Hack hire to marble quarries" and another paid to Latrobe for \$161.27 for "Expenses exploring marble quarries" (Lane 1816). What marble quarries? Who owned them? Where were they?

Latrobe's biographer Talbot Hamlin, in his 600-page work, made no attempt to identify quarry locations and only repeated a story told by Latrobe's son about



Potomac marble boulder in Leesburg, VA. Photo: Paul Kreingold.

the discovery of the marble on the Loudoun estate of Samuel Clapham (Hamlin 1955: 444). He implied that the quarries were on the estate, but there is no other proof, and much of the rest of the story is apocryphal.

Other historians wrote that the marble was found on the “banks of the Potomac River, just above Conrad’s Ferry” (Kapsch 2018: 218); on “both sides of the Potomac River in Loudoun County, Virginia and Montgomery County Maryland” (Allen 2001: 106); and “in Loudoun County Virginia” (Norton 1977: 241).

Cartographers are no clearer. According to Yardley Taylor, a much-quoted early Loudoun cartographer, “This rock was used for the pillars in the Capitol at Washington, and may be seen in the Representatives Hall and Senate Chamber” (Taylor 1858). Mr. Taylor never identified a Loudoun quarry location, not even on his 1853 map, the first detailed map of Loudoun County, which can be seen at the Balch Library in Leesburg.

Geologists are no exception. As the 1898 Maryland Geological Survey reported, “There is some doubt as to the exact location of the particular source of these blocks used in the capitol” (Maryland Geological

Survey 1898). And as Joseph K. Roberts wrote in his 1928 book *The Geology of the Virginia Triassic* (Roberts 1928: 130):

The rock was first noted by B.H. Latrobe, who selected it for columns in the National capitol. It would seem from Latrobe’s account that the quarries from which the stone was taken were located in Loudoun County, Virginia and in Montgomery County, Maryland.

There’s that phrase again!

Leesburg Sites?

Loudoun historian and mapmaker Eugene Scheel suggested two locations in Loudoun that might have been sources of Potomac marble for Latrobe: Olde Izaak Walton Park and the Leesburg Limestone Quarry, both within Leesburg town limits (Scheel n.d.). These are real possibilities but require more investigation.

Scheel identified the pond at Olde Izaak Walton Park as the quarry. I have mapped the depth of that pond, and nowhere is it more than 7 feet deep. Additionally, I have photographs from 1955 of Izaak Walton League members digging that pond. The actual quar-

ry in that park is about 200 yards south of the pond, hidden by trees and poison ivy.

Government publications do not offer much more help. According to a pamphlet published in 1975 by USGS, “Until the Chesapeake and Ohio Canal was finished, the huge blocks were brought overland from quarries near Point of Rocks, Maryland, 46 miles west of Washington” (Withington 1975: 12). Interestingly, when the pamphlet was reissued in 1998, it was 10 pages shorter and said only that Potomac marble came from “various localities” (USGS 1998: 8).

Marble Quarry Campsite?

A Marble Quarry Campsite lies on the Chesapeake & Ohio Canal towpath at milepost 38.2. The C&O Canal Trust website describes it as follows (C&O Canal Trust n.d.):

According to old maps, before the C&O Canal was built, there was a “Marble Quarry” running along the Maryland side of the river for over a mile. The stone that was quarried here was known as “Potomac marble,” which wasn’t a solid substance, but rather was composed of angular pebbles held together by a limestone matrix. Benjamin Latrobe discovered Potomac marble with its varied and rich colors and made the decision to include it in the Capitol buildings he was designing.

I have found no sign of a quarry near this campsite.

So isn’t there at least one 200-year-old hole in the ground that we can prove was a [source](#) of the Potomac marble for the columns in the Capitol?

Yes, there is. It is located 2.2 [miles](#) upriver from White’s Ferry on the C&O Canal towpath, at milepost 38. Its coordinates are 39.177192, -77.4960702.

The Investigation

In the April 8, 1817, issue of the *Genius of Liberty*, a local Leesburg newspaper, an advertisement read as shown in the sidebar at right.

All of the men listed were important in their communities, and many had a direct relationship to Latrobe and the rebuilding effort in the capital. According to Eugene Scheel, for example, John Littlejohn was a Methodist minister and sheriff in Leesburg and was part of the chain that preserved the Constitution and other important state papers hurriedly removed from Washington for safekeeping immediately before the burning in the summer of 1814 (Scheel 2002).

John Hartnett (“at the quarry”) was an experienced stone mason who was placed in charge of shaping the Potomac marble columns when they arrived in Washington. According to an article in the *National Intelligencer* on January 24, 1817, in June 1816, Commissioner Samuel Lane contracted with Mr. Hartnett, “an experienced marble mason, for all the columns and pilasters of the House of Rep” (Latrobe 1817b).

Most important, though, is Samuel Clapham. The Clapham family was active in Loudoun County for generations, involved in farming, quarrying, and canals. The family estate house, named Chestnut Hill, still stands just west of Route 15 in northern Loudoun County. It was Samuel Clapham who owned the land leased by the U.S. government in 1817 for the first Potomac marble quarry. In an August 8, 1815, letter to the commissioners of public buildings, Latrobe identified Clapham (Carter 1988: 681):

There is on the S. East of the Catocktin Mountain a very large extent of country, which abounds in immense Rocks of Marble, or Limestone *Breccia*, that is of a Stone consisting of fragments of ancient Rocks

Wanted Immediately.

At the Marble Quarry, Montgomery County, Maryland, on the Potomac,

ONE HUNDRED STRONG, HEALTHY,
Laboring Men

To whom liberal wages will be given, and for strong and healthy negro men *Ninety Dollars* from the first of April until the first of January next; or in proportion for such time as they shall remain at the Quarry.

By order of the President of the U. States.

SAMUEL LANE, Commissioner of the public buildings

APPLY TO

John Nelson, esq. Frederick Town,
John Littlejohn, esq Leesburg,
John Hartnett at the Quarry,
Joshua Shelton, near Conrad’s ferry,
Major Noland, at Aldie (Loudoun)
Samuel Clapham, esq
The printer of the paper, Alexandria
And the Commissioner of the public buildings at Washington
March 28th

bound together by calcareous cement, and thus becoming one solid and uniform (homogeneous) Mass of Marble. This Range of Rocks I have traced from James river to the Delaware, but it appears nowhere of a more beautiful kind then on the Patowmac. A specimen will be submitted to you as soon as I can get it polished.

The largest Mass of this Kind of Rock is situated on the Maryland side of the Patowmac [sic] on land the property of Samuel Clapham, Esqr. It overhangs the River, and would furnish without any land carriage *all the Columns of the Capitol of one block each* if required, and of beauty not exceeded in any modern or ancient building.

In February 1816, the commissioners contracted with Samuel Clapham to quarry the marble (Latrobe 1816). On March 14, 1816, Latrobe sketched the outcrop and titled the piece, “Breccia Marble Rock opposite Clapham Island” (Carter 1985: 336). Clapham Island is now called Mason Island and is about 1.5 miles long, with its upriver end directly across the Potomac River from the Marble Quarry Campsite.

All this evidence and more pointed to the location of a quarry in a 1.5-mile stretch of Maryland shore along the Potomac River across from Mason Island. However, my search in autumn 2018 failed to find one.

The Actual Hole in the Ground

In 2018, while I was researching the history of Potomac marble, Mary Oehrlein, a historic preservation officer at the Capitol, became an important resource. Among other items, she sent a memorandum dated January 1965 and written by Owen H. Ramsburg, an engineer employed by the Office of the Architect of the Capitol (AOC). It was addressed to Mario E. Campioli, the assistant architect of the Capitol and the man in charge of restoring the old Senate Chamber.

The memo begins, “This investigation and report was made in order to find similar marble to be used in the restoration of the Old Senate Chamber” (Ramsburg 1965: 1).

In an attempt to locate “similar marble,” Mr. Ramsburg consulted many of the same sources I had used, only to find the same ambiguous results. At first, thinking that the Point of Rocks area was the probable location of the quarry, Mr. Ramsburg made multiple visits to the area, in particular visiting Camp Kanawha, a private club that still exists.

Camp Kanawha has a 6-foot-high Potomac marble obelisk near its gate and uses the stone for some of its chimneys. Except as borders for gardens, this is the only use of Potomac marble besides the columns in the Capitol that I have so far seen.

Mr. Ramsburg took Potomac marble samples at Camp Kanawha and along the nearby Baltimore and Ohio Railroad tracks. In all, Mr. Ramsburg made three visits to this area between October and December 1964 together with Frank X. Kuhn, a stone expert employed by the AOC. The men remained unsatisfied that the source of the marble columns was there.

The investigation received critical evidence when Mr. Ramsburg located Latrobe’s article in the *National Intelligencer* from January 24, 1817 (Latrobe 1817b). Latrobe had written the following:

The Potomac, breaking through the Cotecktin mountain, crosses the Breccia until it meets the Monocacy under the S.E. side of the valley; it then suddenly turns to the S.W. and again enters the Breccia, leaving a large mass on the Maryland side (the east side) of the river, by far the highest part of this irregular compound. It immediately however turns to the S.E. and at Conrad’s Ferry [now White’s Ferry] leaves the Breccia finally. On this high mass in Maryland, in which the quarry is opened.

Further search in this “high mass in Maryland” above White’s Ferry revealed that the land was broken roughly into two bluffs, with a deep ravine between them. A thorough search was made of the area, to no avail.



View of the Potomac River from the quarry. Photo: Paul Kreingold.



*The author standing in front of the east wall of the quarry.
Photo: Paul Kreingold.*

Finally, National Park Service rangers were mobilized in January 1965 and an expedition was organized. On February 1, 1965, Chief Ranger Bell of the National Park Service announced that they had located the quarry 2.2 miles upriver from White's Ferry.

Visiting the Quarry

It took me two attempts to find Latrobe's quarry, despite specific instructions in the Ramsburg report (Ramsburg 1965).

The quarry is impossible to see from the towpath when there are leaves on the trees and difficult to see when there are none. Using an accurate GPS device, walk upriver on the towpath from White's Ferry. The river will always be on the left, and in a mile or so, the farmland on the right gives way to a growing stone ridge. (The occasional drill marks in the ridge are from the canal construction and not related to the quarry.)

The quarry is located at the top of this ridge at exactly 2.2 miles. Fortunately, the canal is shallow in this area and can be easily crossed, but wading boots are recommended.

Climb the ridge and enter the quarry. Over 50 years later, it is exactly as described in the report by Mr. Ramsburg (Ramsburg 1965):

Some of the sides of the quarry show drill marks as do one or more blocks laying loose in the bottom of the quarry. The south wall or side of the pit is practically solid Potomac marble. The east wall has two to eight feet or more thick seams of the red sandstone of the Newark formation between which are seams of Potomac Marble. On the north side, the bottom of the pit, in general, meets the natural slope of the bluff and at the west side the floor of the pit drops off abruptly to the canal below.

Interestingly, during a search along the water's edge in the immediate area of the quarry, some marble blocks were found half buried in the mud. (The stones were first noted by Jon Wolz, a volunteer level-walker for the C&O Canal Association and an avid historian.)

Was this the result of a careless boatman loading the cargo in 1817 or simply debris scattered from the quarry above over a 200-year period? Further investigation is needed.

Loudoun Quarry?

Having successfully located the main Montgomery County Potomac marble quarry, I am continuing my search for a Loudoun County quarry. Oral histories point to at least two locations as possibilities, but documentary proof is still needed. ↗

Acknowledgments

I thank Master Angler David Crenshaw of Leesburg, VA, for helping me measure the depth of the pond in Olde Izaak Walton Park using his Deeper Sonar device. Photographs of the pond being dug were provided to me by Dan Davis, the education director of the Loudoun Country Izaak Walton League. He received them in a letter dated March 10, 2015, from Tom Caviness, whose father Jack Caviness was a charter member of the organization.

Thank you to historian Edward Spannaus of the Lovettsville Historical Society for locating the advertisement for Potomac marble quarry workers, which was reprinted many times in local newspapers. I am

also indebted to Dr. George Lewis for guiding me through the Camp Kanawha area. On my successful second attempt to find the quarry, I was accompanied by Dr. Roger Biraben of Hillsboro, VA, who greatly aided me in the search.

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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.amlands.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

λ.

Save the dates!
Field Trip Opportunities

Northern Virginia Community College
Geology Field Trips

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, 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.

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 at Woodend

March 1, 2020, 1:30–4 p.m. The cost of this field trip, led by Joe Marx, is \$36 for nonmembers. The ANS Woodend Sanctuary in Maryland's Piedmont has a tumultuous geologic history extending back half a billion years. We'll hike around the sanctuary grounds and down onto the floodplain of Rock Creek, examining the topography and underlying bedrock to see how they bear witness to the long-term story. Our walk, mostly uphill and downhill over rocky and muddy terrain, will be 1 to 1.5 miles in length.

Geology of Holmes Run Gorge

April 19, 2020, 12–4 p.m. The cost of this field trip, led by Joe Marx, is \$36 for nonmembers. Alexandria



sits atop a wedding cake of overlapping and intersecting terraces created by the Potomac River and its ancestral streams. Holmes Run, a relatively large upland watercourse in the northwestern quadrant of the city, has sliced through the layers down to the bedrock on which they all rest. We will walk about 3 miles on good trails and mostly level ground through the Holmes Run Gorge, examining outcrops of granite, schist, and partially formed sedimentary rock. The discussion will focus on the ancient origins of the various rock types and on changes that have happened within the gorge in historical times. An added bonus will be a miniature magnolia bog! Note: The pace set and distance covered on our geology hikes will be faster and farther than our usual naturalist's shuffle. ↗.

Federation News
2020 Regional Federation
Conventions



by Emerson Tucker

Editor's note: Adapted from A.F.M.S. Newsletter (December 2019), p. 8. (Eastern dates not given; Northwest dates and location not given.)

EasternMarchHickory, NC
Rocky MountainJun 19–21Big Piney, WY
CaliforniaJun 25–28Lodi, CA
MidwestSep 18–20Howell, MI
South CentralOct 12–13Temple, TX
SoutheasternOct 16–18Knoxville, TN
↗.



Annual Rockhound Rendezvous— Quartzsite

by Jennifer Haley, AFMS Historian

Editor's note: The article is adapted from A.F.M.S. Newsletter (December 2019), p. 6.

Recreational rockhounds have been setting their sights on traveling to Quartzsite, AZ, each winter for over half a century to experience the annual festivities of the annual rock and gem, recreational vehicle, and sports shows.

What has made this place so special for so many people for so many years?

I would have to say that it's the small-town character in a Wild West historical setting with the backdrop of the Sonoran Desert.

Our own AFMS past president Doug True, who served in 2018–19, and his wife Jeanette have been overwintering in Quartzsite as vendors since 1997. The annual Pow Wow Rock, Gem, and Mineral Show, combined with field trips to collecting sites, is what began the rockhound migration to Quartzsite back in 1965. That first year, 16,000 people visited the event; news of the show as a rockhound's dream destination made the annual road trip to Quartzsite famous among members of rock and gem clubs.

Today, about 1 million visitors come to Quartzsite during show season. Some stay a few days, others a few months.

If you plan to stay in in Blythe, CA, Quartzsite is only a 25-minute drive away. Quartzsite itself has trailer parks with full hookups for recreational vehicles (RVs). Wherever you plan on staying, try to book early.

If you are into dry camping, as are thousands of RV enthusiasts in Quartzsite, vast public lands managed by the federal Bureau of Land Management (BLM) can accommodate your needs. Quartzsite has gas stations and restaurants, although if you plan on eating out for dinner, you should go before 4 p.m. to beat the rush after the daily shows close.

The American Lands Access Association (ALAA) has been holding one of its two meetings there each year, along with a trash cleanup in coordination with BLM on public land. Check the ALAA website for more details.



Quartzsite venue in Arizona.

The Wild West history of Quartzsite is unique. In the 1850s, a settler built a fort to protect his water from Native American attacks. For a while, the town was a stage coach stop.

The Army brought in 77 camels from the Middle East, along with camel drivers, to help with building projects, especially desert roads. Camels could carry two to three times the weight of Army mules and could survive on less water.

When the Civil War began, the Army projects with camels stopped and Quartzsite became a ghost town. You can still see a related memorial in the Quartzsite Pioneer Cemetery, a stone pyramid made of local rock and mortar with a camel on top and a plaque with the nickname of one of the famous camel drivers, Hi Jolly (Hadiji Ali, from Syria).

Prices have been really good at the shows. It's a great place to buy rocks for your club shows and for junior activity programs, and you'll always find something special to add to your collection or as a gift for someone else. If you are looking for something for your RV, you'll find it at the show.

If you haven't been to Quartzsite, I hope you get a chance to go and enjoy what has been over a century-long rockhound tradition. ➤



Safety Matters A Difficult Topic

by Ellery Borow, EFMLS Safety Chair

Editor's note: The article is adapted from EFMLS News (November 2019), p. 5.



It is a difficult topic, especially in polite company, suggestive as it is of uncomfortable situations. It's dripping with implications, and it's also lifesaving.

What is it?

It's sweat—or, rather, perspiration. Our bodies sweat—pardon me—perspire for numerous reasons. But they all lead to the same result: we lose valuable water, salt, and other substances.

At times, we don't realize that we are perspiring, such as after swinging that 15-pound sledgehammer for a while, when the perspiration gets into our eyes and impedes our ability to see what we are swinging at. What do we do then? We wipe our brow, dry our eyes, and go back to swinging. After all, we are passionate about our hobby.

It's usually a while later when we decide we are thirsty and take a water break. By then, we are already dehydrated. When thirsty, we are already dehydrated, our body unbalanced by lack of precious water.

I'd like to make a case for drinking water before we are thirsty and drinking as we go rather than waiting until we feel thirsty. When we anticipate doing something likely to cause perspiration, I'd like to make a case for keeping handy a bottle, a cooler, a thermos, an ice chest, an insulated bag—whatever, just something containing a sufficient quantity of water to drink.

When working up a sweat indoors, perhaps placing a sign nearby with the words "Drink Water" would be in order to remind us to rehydrate. Keeping our bodies hydrated is important for just about everything we do—thinking, digesting, exercising, and so on.

If we are unbalancing our bodies through lack of water, we are making it harder to do whatever activity we are engaging in. For your body's sake, drink up!

One other important consideration is what we drink. Although soda, soft drinks, coffee, energy drinks, tea, and alcoholic drinks all contain water, they also con-

tain substances that affect our bodies and how we process water. Pure water is hard to beat for optimum performance. When thirst calls, water answers.

Before thirst arrives, please drink up! Keep your body at optimum operational levels. Drink and be cool. ↗

Strawberry Quartz

by Lee Davisson

Editor's note: The article is adapted from Livermore Lithogram (newsletter of the Livermore Valley Lithophiles, Livermore, CA), January 2017, p. 1.

A lapidary favorite is the mineral referred to as strawberry quartz, which has a beautiful reddish color imparted by inclusions of hematite. Macroinclusions can give the mineral an unusual stringy texture; however, the preferred variety has microinclusions that make the mineral more uniformly pink to dark reddish in color. The inclusions add a sparkly iridescence to a polished crystal.

Three principle collection sites are in Mexico, Morocco, and Kazakhstan. Crystal sizes tend to be less than 2 inches, with crystal clusters of over 6 inches.

The hardness of quartz makes the material readily shaped and polished. Cabochons of all shapes have been made into beautiful jewelry pieces. Star patterns have been created by cutting the mineral along a termination face. ↗



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

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2 Groundhog Day	3	4	5 MSDC mtg, Washington, DC	6	7	8
9	10 GLMSMC mtg, Rockville, MD	11	12	13	14 Valentines Day	15
16	17 Presidents Day	18	19	20	21	22
23	24 NVMC mtg, Arlington, VA	25	26 MNCA mtg, Arlington, VA	27	28	

Event Details

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

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

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

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



*Lepidolite from Itinga, Minas Gerais, Brazil.
Source: Wikipedia.*

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



**Mineral of
the Month:
Lepidolite**

PLEASE VISIT OUR WEBSITE AT:

<http://www.novamineralclub.org>

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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. Make check payable to
Northern Virginia Mineral Club or pay with cash.

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>).

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. (No meeting in July or August.)

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

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