THE NORTHERN VIRGINIA MINERAL CLUB INC

The Mineral Newsletter

Meeting: October 25 Time: 7:30 p.m.

The meeting will be hybrid due to the coronavirus pandemic. Details on page 9.

Axinite

Puiva, Khanti-Mansi Okrug, Russia

Photo: Bob Cooke.

Volume 61, No. 9
October 2021
Explore our website!

October Meeting Program:

Minerals From Sardinia

Details on page 10

In this issue …

Mineral of the Month
Axinite

by Sue Marcus

As I write the column, the rabbit trails (or perhaps the maze of underground mine workings) stretch before me—and you, dear reader. I thought I had chosen a Mineral of the Month that would be easy: axinite (or ferroaxinite, as it is more properly called). I learned that it is now axinite-(Fe) and has several chemical relatives: axinite-(Mg), axinite-(Mn), and tinzenite. We will review these minerals, officially called the axinite group, together.

The famous French geologist Rene Just Haüy gave the original material the name axinite in 1797, based on the wedge-shaped crystals. The Greek word for pickaxe (αξίνα) is the source of the name.

Natural scientists and mineralogists, mostly from Germany and France, described specimens of axinite and named them, sometimes using variations of the same names, sometimes not. The U.S. National Museum published a useful reference that does not seem to be cited as often as it should be. It's Bulletin 33, published in 1877. Here's what it reports for axinite, with my added information in brackets to aid future researchers:

> "Espece de schorl, [J.G.] Schreiber [German/French, 1781 also and R. de L'Isle, France, 1785]; glasschorl, Blum; glasstein; janolite, la Metherie [J.C. de la Métherie, France, 1892]; Pierre de Thum, Broch.; prismatic axinite, [F.C.] Mohs; schorl transparent lenticulaire; schorl transparent rhomboidal; schorl, violet; Thumerstein, Wern. [A.G. Werner, Germany, 1888]; Thumerstone, James. [R. Jameson, Scottish, 1816]; thumite; yanolite, Dela [J.C. de la Métherie, France, 1892; my date may be incorrect for one of the de la Métherie or Delamétherie references, I do not know why he was cited twice, he may have used different names for different material, though that is speculation]; yanolithe."

Mindat refers to "Blumenberg" with no other information. I could find nothing else on this person.

The U.S. National Museum Bulletin 33 cites Blum, which is explained elsewhere as J.F. Blumenbach. I found no evidence that this person (1752–1840) was involved in geological sciences, though he was involved in anthropology.

Most scientists and collectors used variations on the word "axinite" until techniques evolved to detect the predominance of iron, prompting Waldemar T. Schaller to revise the name to ferroaxinite. That was the name on labels until the International Mineralogical Association (IMA) standardized mineral names in 2007 and created the new moniker axinite-(Fe).

The other minerals or species in the group share most of the same history of nomenclature because they were differentiated or discovered later.

Happy Halloween!

Northern Virginia Mineral Club members,

For the October club meeting, we will try something new—a hybrid meeting on **October 25, 7:30 p.m., at King's Park Library** (9000 Burke Lake Rd., Burke, VA 22015).

See details starting on page 9.

Axinite on quartz, Calaveras County, California. Photo: Bob Cooke.

All members of the axinite group contain boron, so the geologic environment for these minerals must contain a source of this relatively scarce element. Boron-bearing fluids or fluids passing through boron-bearing country rock formed these minerals through the geologic processes of contact metamorphism or hydrothermal fluids coursing through the host rocks. Granitic rocks are usually the source of the boron. The granites need not be visible or close to the locality; the hydrothermal fluids can travel for miles.

The axinite group minerals cannot be distinguished visually; laboratory techniques must be employed. It may be possible to make an educated guess about the likely species based on the locality, if the locality is well known and is not the source of more than one of the species in the axinite group.

Axinite-(Fe) is the most common member of the group and therefore the most likely to be found or bought as specimens, though not always. For example, interesting pink axinite crystals were found at the Marmoraton Mine in Ontario, Canada, but no species was given. Although axinite-(Fe) is more common, axinite-(Mn) is more likely to be pink. Without more published information, we collectors are left speciesless.

Axinite-(Fe)

Le Bourg-d'Oisan, in the mountainous region of southeastern France, is sometimes part of the famous Tour de France bicycle race and close to resorts. You could do some biking, stay at a resort, and visit a famous axite locality. Axinite has been found here for so long that many specimens are simply labeled "axinite;" only the more recent or more studied specimens have the label "axinite-(Fe)."

Some specimens exhibit the typical wedge-shaped crystals, while others are more chunky than normal. Specimens were found up to 9.7 centimeters (3.8 in) across, with individual crystals up to 2 centimeters (0.8 in) in size. Colors flow through the brown shades, from orange-brown through root beer to dark brown, as expected for iron-rich axinite. Many specimens have a bright luster, setting the crystals off from their matrix.

The Swiss localities around Medel in the canton of Graubünden are the source of interesting axinite-(Fe) in different habits. Some sharply shaped axinite-(Fe) crystals from Piz Vallatscha are covered with fine dustings of dull green minerals from the chlorite

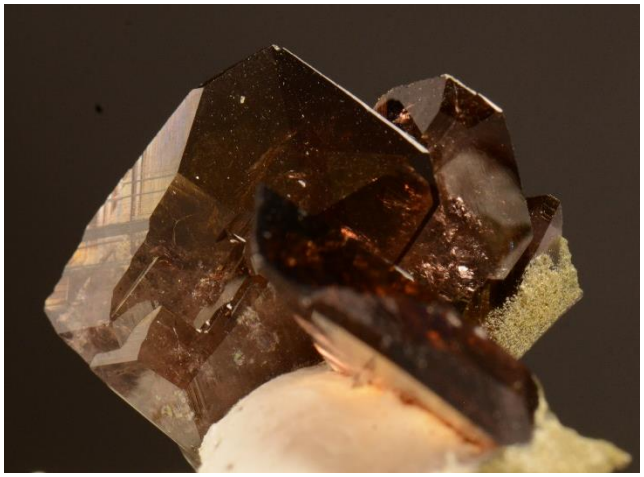
Axinite with epidote, Oisans, France. Photo: Bob Cooke.

group, while others from here are bright and glossy. Mindat image 3E6-F7Y portrays a micromount of axinite-(Fe) crystals from the Cristallina Valley on a hairlike rutile crystal; it's enough to make me consider becoming a micro collector

The Cornish mines in southeast England are known for many unusual minerals. The area around Botallack, near St. Just in Penrith, particularly the delightfully named Stamps and Jowel Zawn, produced some nice, lustrous axinite-(Fe) specimens with crystals up to just over 1 centimeter (0.4 in) in size. Most specimens appear to be in shades of brown, although at least one image on Mindat is lavender to pink; colors can be due to lighting of the photos, so true colors might be different. Specimens were still being found in 2004.

A photo on the Mindat website for the named Stamps and Jowel Zawn locality shows an extremely dangerous collecting site. Mindat explains a zawn as follows, quoting Kingsbury (1958): "A 'Zawn' in the St. Just area is a sheer steep-sided chasm in the cliffs formed by the walls of an outcropping mineral-vein, when the vein itself has disintegrated and fallen into the sea."

Russia has been a source of fine, clean axinite specimens (like the one on page 1). By that, I mean the crystals are euhedral, distinct, lustrous, and without matrix or else clearly standing out from it. They are attractive and display sizable crystals. Axinite-(Fe), axinite-(Mn), and undifferentiated axinite were found in Dal'negorsk (or Dalnegorsk), notably in the Bor



Axinite-(Fe). Puiva, Khanty-Mansi Okrug, Russia. Photo: Bob Cooke.

Pit. The axinite-(Fe) would be a nice addition to most collections, with specimens forming plates or fans of crystals. The wedge-shaped crystals predominate; flattened and chunky crystals were also found with sizes up to at least 6.0 centimeters (2.4 in). Colors are usually described as clove-brown. Most came out in the 1990s, although some lovely samples were extracted at least as late as 2015.

Axinite-(Fe) from Puiva looks different from the Dalnegorsk material and from most other axinite-(Fe) crystals. Puiva crystals are tabular; some are translucent. They can grow up to at least 8.7 centimeters (3.4 in) in the longest dimension; the 8.7-centimeter specimen is a "floater," meaning without points of attachment, and it is transparent in part. Some of these crystals are gemmy and suitable for faceting, though as a crystal collector, I would not like that to occur. If I correctly interpret a 2009 report by Rock Currier, a 20-by-33-centimeter (8-by-13-in) specimen from the Joseph Freilich collection sold at auction for $14,400.

In Japan, axinite-(Fe), axinite-(Mn), and undifferentiated axinite came from the Obira Mine in the Oita Prefecture and the Toroku Mine in the Miyazaki Prefecture. These are uncommon. Some specimens are transparent or translucent, with the typical wedge-shaped crystals, although one Mindat photo of axinite-(Fe) from the Obira Mine shows very different pyramidal crystals.

Lovely doubly terminated axinite-(Fe) crystals were found in 2013 in Sayan, Huaura, Peru. These are matrix pieces with glassy, deep-brown axinite-(Fe) contrasting nicely with the albite, quartz, epidote, and chlorite matrix. Specimens shown on Mindat range up to 15.5 centimeters (6.1 in) in size, with individual crystals up to 1 centimeter (0.4 in) in separate specimens.

The descriptions on this Mindat site also taught me a new word, "lanceolated." I looked it up, then thought about it: lance-shaped, narrow stem, oval middle, coming to a point. As I often note, I learn as I write these columns.

The finest North American axinite-(Fe) crystals came from a discovery made during and just after construction of the New Melones Dam in California. Axinite-(Fe) formed in veins that cross-cut diverse rock types, indicating late emplacement. Axinite-(Fe) occurred in tension fractures. These fractures are normally parallel zones of weakness that form when masses of rock are pulled apart laterally. Mineral-rich fluids, in this case bearing the chemicals for axinite-(Fe), course through the weaker zones and, under the right conditions, deposit minerals in them. Most of the axinite-(Fe) is massive, but where there were vugs (voids), crystals could form.

At New Melones, axinite-(Fe) can often be transparent to translucent, particularly at the tops of the wedge-shaped crystals. Colors have brown hues, some with tints of lavender, some with more red. Many show high luster. Single crystals grew up to 6.5 centimeters (2.6 in) in size. The property, managed by the U.S. Bureau of Reclamation, is closed to collecting. A 2003 message from Jack Crowley (a friend of ours from when we lived in Reno) to Rock Currier

Axinite-(Fe). New Melones Dam, California. Photo: Bob Cooke.

stated that the area had be heavily collected before it was closed and that vegetation had since taken over many of the diggings.

Axinite-(Fe) occurs in several other places in California, including Coarsegold (Madera County), the Miracle Mountain Mine (Calaveras County), Genesee Valley (Plumas County), and the Jensen Quarry (Riverside County). Specimen quality is seldom good; exceptions include lustrous crystals up to 1.5 centimeters (0.6 in) in size from Genesee Valley, more than 5 centimeters (2 in) in size from the Jensen Quarry, and up to 7 centimeters (~3 in) in size from the Miracle Mountain Mine.

I could not determine whether the Grey Cloud Claim is still a valid staking near the Hart River in Yukon, Canada. If so, private collecting would not be allowed. Specimens seem scarce but worth having in any collection because they have bright, shiny euhedral crystals up to 1 centimeter (0.4 in) in size.

Byssolite was reported to occur here. As I worked my way through axinite localities, I noted a geological affinity for axinite-(Fe) and byssolite; they occur together is several localities. In others, axinite-(Fe) can occur with forms of asbestos.

The Municipality of Tecate in Baja California, Mexico, does not seem to be a prolific axinite-(Fe) producer. However, Mindat photos show a seemingly doubly terminated 7-centimeter (3-in) crystal and a smaller, glassy one from the collection of Dr. Fred Pough. They were collected many years ago because Pough died in 2006. This could be a locality worth investigating.

Axinite-(Fe) from Vitória da Conquista in Bahia, Brazil, was always rare; the collecting site is either gone or dormant. Some crystals from this location were perfect single crystal floaters (no points of attachment), with at least a few showing gemmy regions within the crystal. Crystal size diagonally ranges up to 7 centimeters (2.6 in). Axinite of an unknown species was found northwest of Vitória da Conquista on the Baixa da Braúa farm near Guajeru.

Very attractive axinite-(Fe) crystals come from Colebrook Hill in Tasmania, Australia. The reddish brown, glassy axinite-(Fe) contrasts beautifully with needles of green actinolite or green tremolite and sometimes with white quartz in pleasing specimens that can range up about 8 centimeters (~3 in) in size; individual crystals on a different specimen were up to

Axinite-(Fe). Yankee Hill, Butte County, California. Photo: Bob Cooke.

18 centimeters (7 in) in size. I found a piece for sale on the web from this locality, although the description made me chuckle—"virtually all the asinine you see." Remember to teach your spellchecker mineral names—and proofread carefully or have someone else do so!

Pakistan is a major mineral specimen producer, with the Skardu District noted for many minerals, axinite-(Fe) among them. There's terrific 17-centimeter (6.7-in) piece for sale for $2,400. It is difficult to determine the size of the individual axinite-(Fe) crystals, but several appear to be greater than 1 centimeter (0.4 in) in size. A single crystal associated with Jordi Fabre's website (price undetermined) was 6.2 by 3.9 by 1.7 centimeters (2.44 × 1.54 × 0.67 in) in size. This crystal is terminated, but the termination is serrated or chipped, the interior of the crystal is distorted, and at least some faces are euhedral (the photo only shows one view). Fabre must have had a good source because he also listed another axinite-(Fe) with a crystal size of 3.4 by 3.2 centimeters (1.34 × 1.26 in). That specimen came from the Tormiq Valley in Skardu in 1993.

Axinite-(Fe) from the La Juanona Quarry in Málaga, Andalusia, Spain, is reported to fluoresce. Crystals have been found up to 1 centimeter (0.4 in) in size.

Axinite-(Mn)

Franklin, NJ, is the source of hundreds of mineral species, including axinite-(Mn). At this locality, fa-

mous for its fluorescent minerals, axinite-(Mn) fluoresces orange-red to red under shortwave ultraviolet light, with possible, usually weaker fluorescence under other wavelengths. This species was reported as early as 1891, when Frederick Genth, a mineralogist and chemist, recognized the abnormally high amounts of manganese in the axinite from this locality. Manganaxinite was the name given to the mineral by Fromme in 1909, a name sometimes varied to manganoaxinite.

In 2007, when IMA standardized axinite nomenclature, the manganese-rich species became axinite-(Mn). Euhedral, richly colored yellow crystals were found at Franklin, along with massive yellow to white material. Axinite-(Mn) from Sterling Hill was different, more yellow-brown than the Franklin specimens and rarer. Crystals were also found at Sterling Hill.

Microcollectors, the Iron Cap Mine in Graham County, AZ, has produced nice yellow-champagne-colored crystals, some of which are translucent.

The Little Three Mine in San Diego County, CA, is better known for its beryl, tourmaline, and topaz, but axinite-(Mn) crystals have been found here too. Though not the finest, they are interesting to locality collectors. Some specimens are flattened, as if pressed by a steamroller, so these would be unusual collectibles.

A vein near the Peruvian village of Cullhuay produced a few very fine axinite-(Mn) specimens up to 15 centimeters (~6 in) across. These rarities feature lustrous, euhedral brown axinite-(Mn), with nicely contrasting green epidote in sheafs of crystals and elongated quartz crystal spears. Axinite-(Mn) crystals from another Peruvian locality, near the village of Canta, are also attractive, though different. The latter specimens are more reddish brown and lack the quartz in the Cullhuay specimens. The Canta specimens exhibit larger individual axinite-(Mn) crystals, whereas the Cullhuay specimens offer more color contrast from other mineral species.

Contact metamorphism in the Årvoll Quarry near Oslo, Norway, formed lovely axinite-(Mn) crystals in specimens up to 2 centimeters (0.8 in) in size. The area, now a national historic site, is closed to collecting.

Dalnegorsk is a Russian mining district known to collectors for its prolific specimen production from the numerous mines The mines are mostly for lead, although copper, nickel, zinc, boron, gold, and silver are also extracted, along with stunning axinite-(Mn) specimens. Sharp, lustrous crystals have been recovered in aesthetic groups up to 8 centimeters (3 in) in size, with individual crystals up to almost 3 centimeters (more than 1 in) across.

Axinite-(Mn) on quartz, Iron Cap Mine, Graham County, AZ. Photo: Bob Cooke.

Axinite-(Mn) was recovered from two localities in Australia's Broken Hill District, according to a "Best of Axinite" article by Rock Currier, which attributed an aesthetic specimen of well-crystalized axinite-(Mn) and equally attractive rose-colored rhodonite to the Broken Hill Proprietary Mine. The specimen in the photo (copyrighted by Currier) was valued by him at more than $10,000 in 2009, primarily due to the rhodonite.

It is not one of the photos on the Broken Hill Proprietary Mine Mindat site. The Mindat site does not list any minerals of the axinite group as occurring at the Broken Hill Proprietary Mine. Currier's source for the specimens with the rhodonite/axinite-(Mn) association is a 1982 mining company publication that Currier quotes as naming the mine from which these came as "ZC" (Zinc Corporation). That was a separate mine from the Broken Hill Proprietary Mine. Whatever the source of the rhodonite/axinite-(Mn) specimens, they must have been rare. We need an Australian mineralogist or expert collector to tell us the rest of this story. The only axinite-(MN) specimen that Mindat shows at the (Broken Hill) North Mine is on galena.

Axinite-(Mg)

Axinite-(Mg) is relatively rare throughout the world. The images on Mindat come from only one locality—

Axinite-(Mg), Merelani Hills, Tanzania. Photo: Bob Cooke.

the famous Merelani Hills in Tanzania. This area is known for its rare minerals and, more particularly, for the rare colors of otherwise more common minerals found there, like zoisite (tanzanite), prehnite, and axinite-(Mg). The axinite-(Mg) occurs in gemmy crystals in pale shades of violet, orange, pink, and blue. Bill Vance (of Vance Gems) reported that at least some Merelani axinite-(Mg) fluoresces fiery orange-red under longwave ultraviolet light. Specimens are rare, but one pictured specimen is 19 centimeters (7.5 in) across. Axinite-(Mg), when it was first identified in 1975 in this locality, was called magnesioaxinite. Like its iron-bearing cousin, it was renamed in 2007 by the IMA.

A locality near Lunning, NV, has produced specimens of all three subspecies of axinite—axinite-(Fe), axinite-(Mg), axinite-(Mn). The latter two formed crystals of up to at least 2 and 5 centimeters (0.8–2 in), respectively.

Tinzenite

This member of the axinite group is rare and, to me, the most attractive. It is usually orange or yellow, with shining sheafs of relatively small bladed crystals. The type locality for tinzenite is Parsettens Alp, Tinizong (Tinzen), Switzerland, where it was usually found in micromount-size crystals, although Mindat shows one poor-quality macro specimen. The Molinello Mine near Genoa, Italy, produced specimens from micromounts to ones with crystals up to 1 centimeter (0.4 in) in size. Collectors have also found tinzenite at other mines (such as the Valgraveglia Mine near Genoa), usually of most interest to micromounters, although rare macro specimens have been found as well.

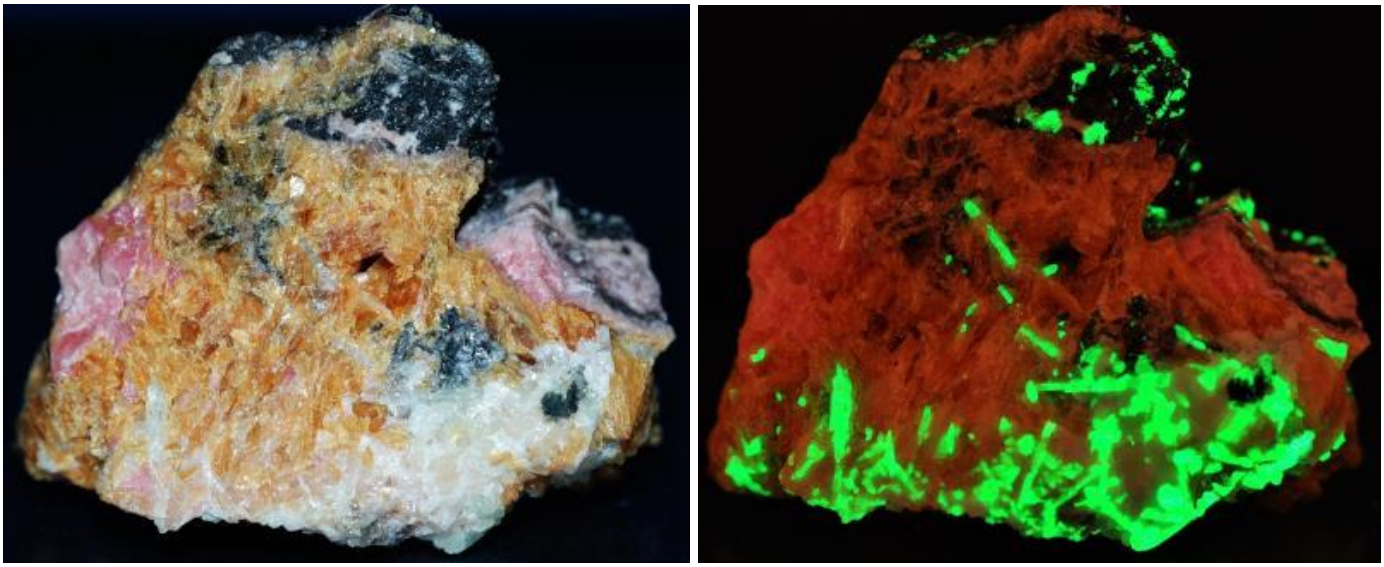
South Africa is rich in the manganese needed to form minerals of the axinite group. Tinzenite was found at two famous mines, Wessels and N'Chwaning II, within the Kalahari manganese fields. Although Mindat displays images of beautiful specimens from both South African localities, tinzenite is not listed by Mindat among the minerals found at either mine.

A gemmy thumbnail-sized tinzenite specimen (with a maximum dimension of 2.1 centimeters (0.8 in)) from the Wessels Mine was listed for sale for $1,950 from a high-end dealer. Far above my price range!

A photo showing a 2-centimeter (0.7-in) orange tinzenite on white calcite from the N'Chwaning II mine was a Mindat "photo of the day" on April 14, 2016 (KE6-KDU). Although the description of the photo states that the mineral of interest is tinzenite, when you click on the thumbnail image to expand it to page size, the label reads "Tinzenite?...." I don't know how to explain this discrepancy.

Tinzenite has been reported from Clutha, New Zealand, although I could not find any detailed information about this locality.

Tinzenite on calcite, Wessels Mine, Hotazel, Kalahari manganese fields, Northern Cape Province, South Africa. Source: Wikipedia; photo: Rob Lavinsky.



Left: Axinite-(Mn) crystals (golden brown), willemite (white), rhodonite (pink), and franklinite (black) from Franklin, NJ. ***Right:*** The axinite-(Mn) fluoresces red and the willemite green under longwave ultraviolet light; the rhodonite and franklinite are nonfluorescent.
Source: Franklin-Ogdensburg Mineralogical Society (n.d.); photos: Robert A. Boymistruk.

The axinite group is meant for collectors. These minerals have no economic use other than to enjoy them. Axinite specimens are not expensive, but most are not identified by subspecies (Fe, Mg, or Mn). More carefully identified specimens are available from reputable dealers for higher prices.

Axinite-(Mg) can be cut or carved as a gemstone. Most faceted axinite (axinite-(Fe) or axinite-(Mg)) looks similar to smoky quartz). Colorful exceptions include axinite-(Mg) from Tanzania, which can have violet shades and axinite-(Fe) from Pakistan. Some cut stones from each both countries display attractive pleochroism (different colors under different lighting conditions). Faceted axinite, especially from Tanzania, can cost up to $2,000 per carat and up to $10,000 per carat for cut stones over 6 carats!

Technical Details

Chemical formulas:

Axinite-(Fe)..... $Ca_2Fe^{2+}Al_2BSi_4O_{15}OH$

Axinite-(Mg) ..... $Ca_2MgAl_2BSi_4O_{15}OH$

Axinite-(Mn) ..... $Ca_2Mn^{2+}Al_2BSi_4O_{15}(OH)$

Tinzenite..... $Ca_2Mn^{2+}{}_4Al_4[B_2Si_8O_{30}](OH)_2$

Crystal form.....Triclinic

Hardness 6–7

Specific gravity.....3.25–3.28

Color..... Shades of brown, light purple-tinted brown (particularly -Mg form); orange, yellow, white (-Mn form and tinzenite)

Cleavage..... 1 distinct, 2 poor

Fracture..... Conchoidal to uneven

Luster..... Vitreous

Streak..... White

Acknowledgements

Properly, these are words of thanks. Herwig Pelckmans is an amazingly gracious, kind, and patient person. He reviewed this article with me, line by line, spending 90 minutes on the phone with me and ending our call *as the sun rose while on holiday in Greece*. This gentleman is a member of the IMA—and nice! I also appreciate the written report by the late Rock Currier. It is "gray literature," not published or directly available unless you dig a bit. We're rockhounds and collectors, so we know how to dig. Thanks to Bill Vance for allowing us to use the photos of his stunning faceted axinite from Tanzania, especially the fluorescent images. I could find nothing like them elsewhere.

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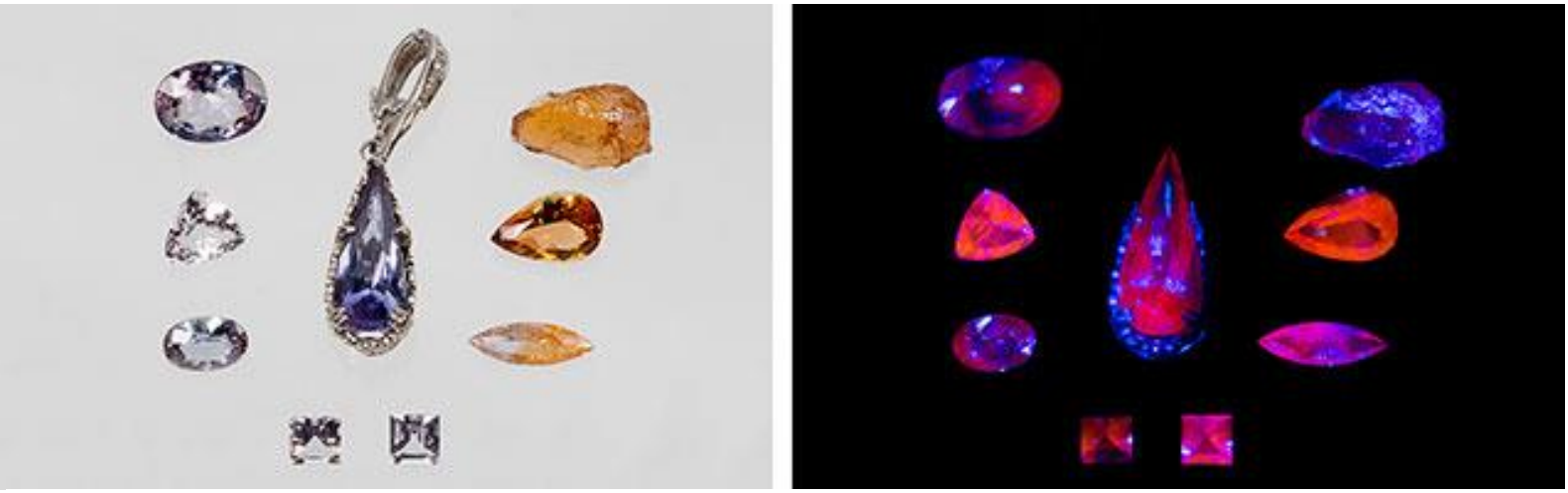

Left: *Eight axinite-(Mg) faceted gems and one rough stone. Clockwise from top right: 1.21-gram orange-yellow rough; 2.72-carat yellow-orange pear shape; 1.14-carat bicolor marquise; 1.51-carat pair of pale pinkish blue princess-cut stones; 1.43-carat pink-blue oval; 1.83-carat light pink to light blue triangle; at center in the pendant, a 4.22-carat oval pink-blue gem.* ***Right:*** *The same gems under longwave ultraviolet fluorescent lighting. Source: Pay (2017); photos: Eric Welch, courtesy of Vance Gems.*

Washington, DC: U.S. Department of the Interior. 244 p.

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October 25 Club Meeting
Hybrid Format

by Tom Kim

We're gonna try something new here, folks: we have a hybrid club meeting planned for **October 25, 7:30 p.m., at King's Park Library,** 9000 Burke Lake Rd., Burke, VA 22015.

John Weidner was instrumental in securing us a meeting space in the library after hours. Thanks, John!

What does this mean? Well, if you'd like to meet some of your fellow club members in person (masks

on), come to the library. Our speaker, Beth Heesacker, will be speaking from Oregon about Sardinian minerals (see her program description below), so we'll watch her presentation from a projection.

However, you can also watch her presentation from home on Zoom:

https://us06web.zoom.us/j/86913245966?pwd=RjdMdGFtdTBFRFQ4L1Q5azlzdEZpdz09

Meeting ID: 869 1324 5966
Passcode: 458458

Either way, hope to see you there!

October 25 Program
Some Minerals From Sardinia, Italy

by Beth Heesacker

A couple of years ago, I purchased a collection of microminerals that had previously belonged to Allen and Barbara Lundgren. Included were a fair number of specimens from Sardinia, Italy. They grabbed my attention for two reasons: first, one of our sons and his family lives in Sardinia; second, it is currently illegal to take Sardinia minerals out of the country. This collection was from before that law went into effect. I felt that it was important to document this rare group of minerals and share it with my mineral friends.

Sardinia is a beautiful island off the Italian coast near Rome. It is made up mostly of limestone and granite sitting on its own microcontinent. It has a long history of mining, stretching from the 6th century BC to the present.

I invite you to meet my Italian family, see the beauty of the island and take a peek at some of its mineral specimens.

I am a woman of many faces and like to try many things. I met my husband while studying electronics back in the '60s. After marriage and getting our three

children into school (a girl and twin boys), I went to work in the electronics industry, working my way from technician, to engineer, to computer system manager for Tektronix and Mentor Graphics. I retired early to go back to school and received my Masters in Theology in 1992. After working for my church for a while, I again retired. My husband and I were rockhounds, but about 12 years ago, a couple of guys came to one of our club meetings and talked about microminerals. I fell in love.

Since then, I have acquired a huge micromineral collection. I have over 17,000 specimens in my computer-based catalog (I designed the relational database myself using Access). That number does not include an East Coast collection (maybe 2,500 mounted specimens, former Micky Marks); two large collections purchased from Mike Shannon (one of almost 8,000 mounted specimens, formerly Allen and Barbara Lundgren); and one of many flats of rough from Tony Sobelek that I have processed. I also have a large collection from Gerald Woods and a smaller one from Ray Schneider. Of course, freebee tables have been very "lucrative." We try to make it to the Northern and Southern California meetings when they are held.

I love to make a home for orphan/estate collections. We have self-collected, but my husband's health has limited that to some extent.

I am the current President of the Northwest Federation of Mineralogical Societies and President of the Pacific Northwest Micro Mineral Study Group. I edit four newsletters: Clackamette Gem for our rock club, the NFMS Newsletter, the Pacific Northwest Friends of Mineralogy Newsletter, and the Bulletin of Friends of Mineralogy national newsletter.

My COVID time is spent processing, sorting, and picturing some of my collection, avidly watching Nick Zentner's YouTube videos on geology, and attending Zoom meetings with my kids and with other clubs around the world. And editing newsletters.

President's Collected Thoughts

by Tom Kim

I recently saw the documentary film "The Diamond," by Caitlyn Greene. A quick search on the internet should take you to a video to view for free yourself. It's brief—only 15 minutes—and it profiles a number of people who were looking for diamonds at the Crater of Diamonds State Park in Arkansas. It's not got much mineralogy in it, focusing instead on the people—oldtimers, couples, veterans, retirees—who happened to be there when it was filmed.

These past few years have shown how much of our hobby is about the company we find as we search for the rocks we love. It's why it's with such heaviness that we've had to cancel our annual November show twice now. Our show really depended not just on the usual crowd of enthusiasts and dealers, but on curious onlookers, neophyte aficionados, ooh-ers and aah-ers, parents and kids. As the COVID restrictions steadily eroded any possibility of attracting that same crowd, the show itself became less and less feasible.

We're not going to simply shelter in place, though. I think we need to be intentional about reaching out and meeting up and getting out. The Zoom presentations have been wonderful, but rockhounding is not just about learning, it's also about showing off and sharing stories and going on trips and digging around together.

We're in a strange liminal place here, though, so a lot of what we'll have to try will be experimental. Our October meeting, for example, will be a hybrid meeting. We'll be at a new location, King's Park Library in Burke, and we'll meet in person (with masks), but we'll also have a Zoom presentation. Is that weird? Yeah, it's a little weird, but let's try it and see how it goes. Next month, we'll likely have our speaker show up in the flesh—but we'll still stream his presentation on Zoom. Again, we'll see how that goes.

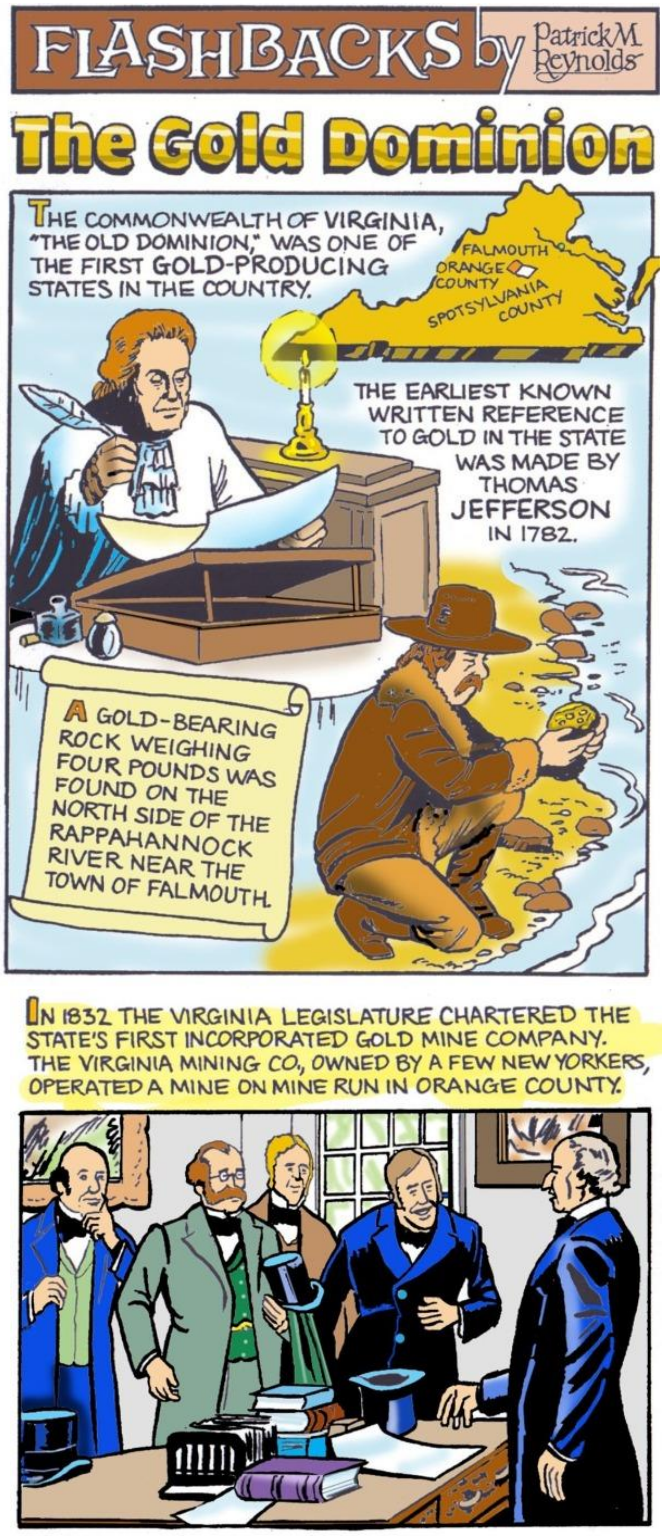
In order to make these pushes, we could really use people to step up and step in. Want to see some field trips? How about a workshop or two? Want to make sure next year's show happens, with an even better kids' area? Want auctions to come back? Know a place where we can hold our auction (not the libraries)? Raise your voice and lend a hand! Give me a shout, and I'll be happy to give you something to do: president@novamineral.club.

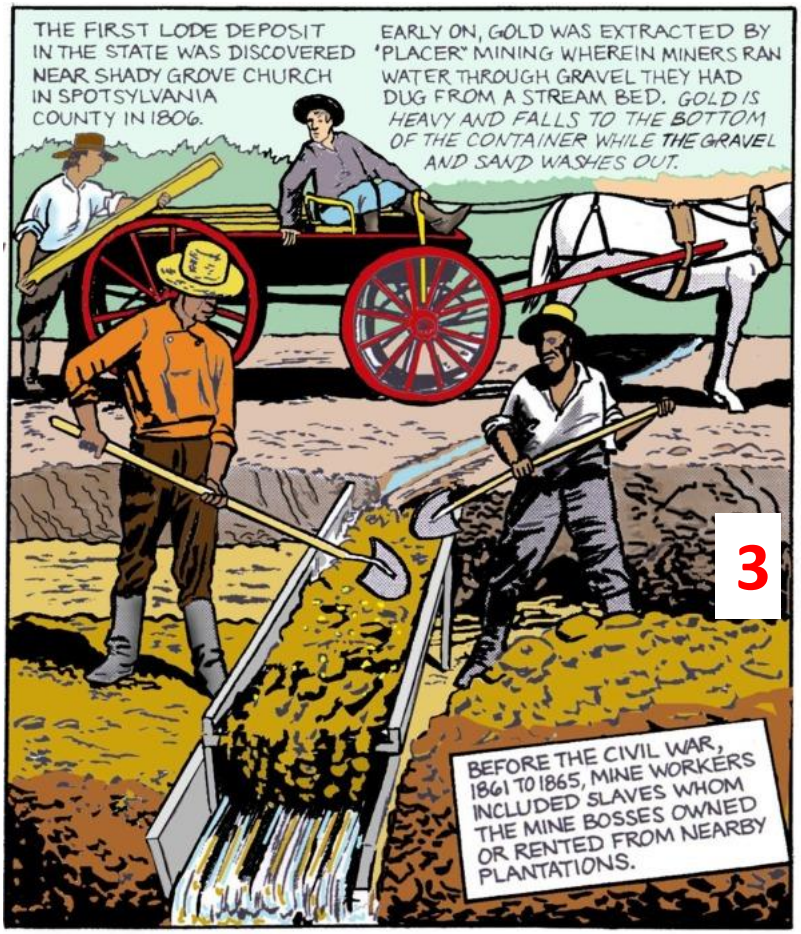
I'd love to get to know you.

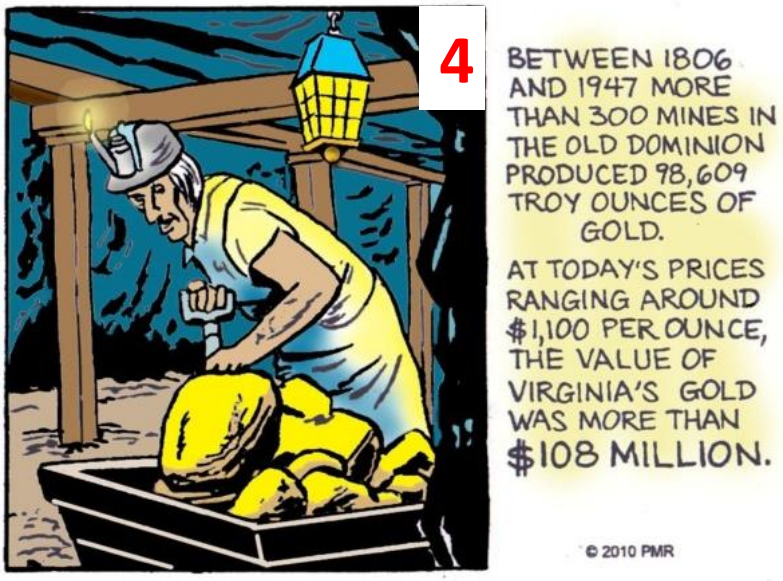
Tom

Gold in Virginia

Editor's note: *The cartoon is taken from the Fauquier County Parks and Recreation website for the Gold Mining Camp Museum at Monroe Park in Goldvein, VA. The cartoon originally appeared in the* Washington Post *in 2010.*







Taking Care of Your Mineral Specimens

by Trevor Boyd

Editor's note: *This article is adapted from Catawiki. Thanks to Sue Marcus for the reference!*

What's the best way to handle your minerals? How can you clean your minerals effectively and safely? From storing to transporting your minerals, here's some advice on keeping your mineral specimens safe, protected, and well presented.

Storing and Displaying Your Minerals

How to display your minerals depends on your collection and your own tastes. The classic way to store minerals is to use small cardboard trays, perspex bases, or acrylic display boxes. These are extremely effective from an organizational point of view and can be great for keeping your minerals safe and reasonably dust free. The minerals can then either be displayed in a glass-fronted display cabinet with effective internal lighting or simply in drawers which can be pulled out to view the contents.

You may want to arrange your specimens in such a way that there is an interesting range of different colours on display, or you may want to group your collection by color, keeping the greens together, the reds together, and so on. Collectors often group their collection by mineral type, perhaps displaying how the crystals differ in shape or color from different locations around the world. Or perhaps try grouping specimens from the same mineral locality together to give a nice representation of what minerals can be found there.

Cleaning Your Minerals

Minerals will often need some type of cleaning before putting them on display, especially any you have collected yourself. Cleaning can range from a simple rinse with ordinary water to treatment with more advanced cleaning products.

Minerals that have built up a coating of dirt and organic matter might require a bleach chemical, such sodium hypochlorite, to be cleaned. For tougher stains, such as iron oxide staining, oxalic acid can be used.

When using any such chemicals, be sure to take all appropriate measures to protect your skin, eyes, and clothing. Also be aware that some minerals, including sulfate minerals, will react with water or are soluble in water and so should never be washed.

So do your research or consult an expert if you're not sure before you start cleaning your minerals.

Handling Your Minerals

When handling minerals, take special care to keep both yourself and the specimen safe. If you don't have a display base or box to carry the specimen without touching it, handle the specimen by any rock, known as the matrix, into which it is embedded. If no matrix is present, carry the mineral very carefully, ensuring that the minimum amount of force or stress is placed on the specimen.

You should always wash your hands thoroughly after handling any mineral specimen and avoid inhaling any dust derived from it. Be aware that certain minerals, including those bearing uranium, mercury, or arsenic, can pose potential health risks. Wear gloves when handling such specimens and consider storing them separately from your other specimens, potentially even outside your home completely.

Transporting Your Minerals

Minerals are often vulnerable to damage when being moved or transported. Usually this happens at the point of collection or purchase. Newspaper is a great resource for wrapping and protecting minerals, especially if you've just been on a collecting trip. There's nothing more depressing than to arrive home after a day of collecting and find specimens in pieces in the back of the car.

As for shipping minerals, for example if you are selling them, wrap the specimens in tissue or foam within a display box or tray and then wrap this in bubble-wrap or newspaper. Then place this inside another newspaper-filled cardboard box.

For the most delicate of specimens, the best way to transport them is actually in a box filled with soap powder. This ensures that the specimen cannot move at all, and the powder can be easily washed off afterwards. Unorthodox? Perhaps. Effective? Most definitely!

How to Write Good

Profanity sucks.

Be more or less specific.

The passive voice is to be avoided.

Who needs rhetorical questions?

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

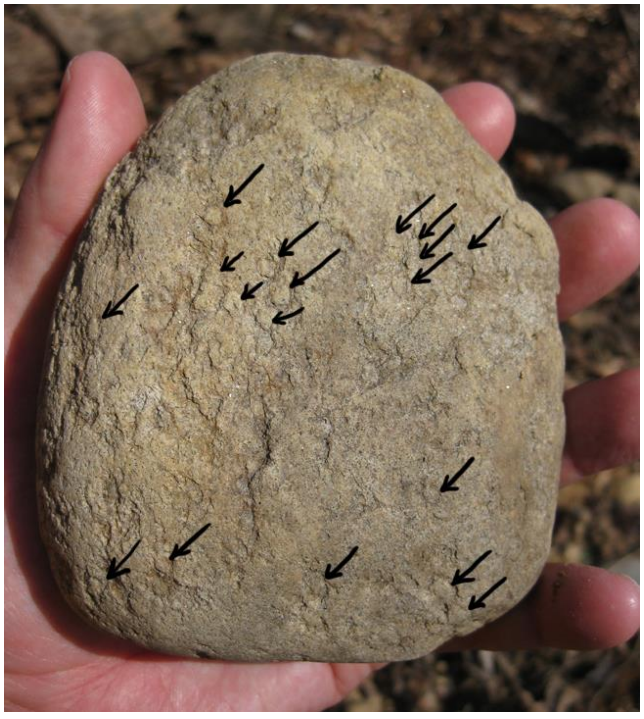
The Rocks Beneath Our Feet

Stone Tools in Rock Creek Park

by Callan Bentley

Editor's note: *The article is taken from Mountain Beltway, 5 June 2013, the author's blog on AGU Blogosphere. Professor Callan Bentley teaches geology at Piedmont Virginia Community College in Charlottesville, VA. Dr. Bentley, who has delivered at least one presentation to our club, is a Fellow of the Geological Society of America. For his work on his blog, the National Association of Geoscience Teachers recognized him with the James Shea Award. All photos (and notations on them) are by the author.*

That's a cobble of quartzite from the Potomac Formation gravels (Cretaceous deposits) exposed along the northern side of Piney Branch valley in northwest Washington, DC. Some of these cobbles come bearing a load of *Skolithos* trace fossils (the arrows):



So that's likely to be the Cambrian-aged Antietam Formation. But we didn't come here for the *Skolithos*. We came for the artifacts. These quartzite cobbles were quarried by Native Americans and used as the base material for sharp tools and implements.

The quartzite breaks with a conchoidal fracture, and you can find many "worked" cobbles at this site, showing multiple intersecting conchoidal fractures. Here's one:

Explanatory Notes on the Geology

by Hutch Brown

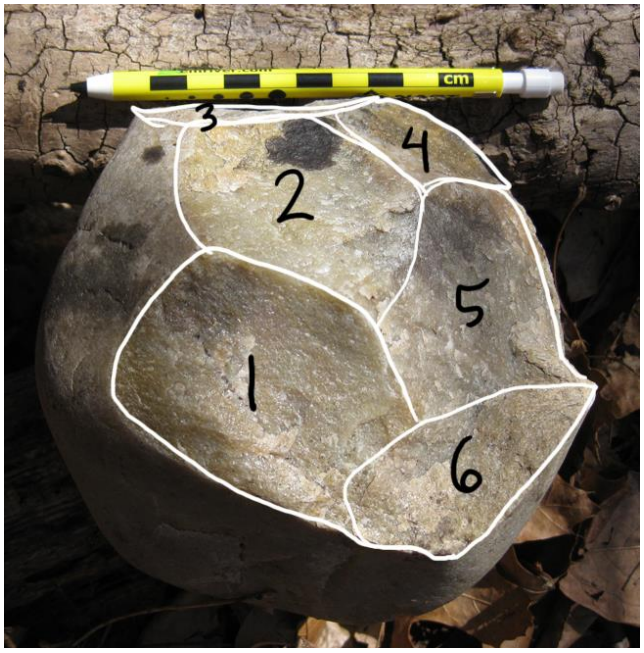
Streams in our area are laced with cobbles containing a trace fossil, *Skolithos linearis*, made by worm-like marine animals burrowing into offshore Cambrian sands about half a billion years ago. The sands hardened into fossil-bearing sedimentary rock. Together with other rocks, the sandstone was metamorphosed when proto-Africa slammed into proto-North America beginning about 320 million years ago in a mountain-building event known as the Alleghanian Orogeny. Antietam quartzite, the fossil-bearing rock, lies on the eastern margins of the Blue Ridge Province near Antietam, MD, at Bull Run Mountain in Virginia, and elsewhere.

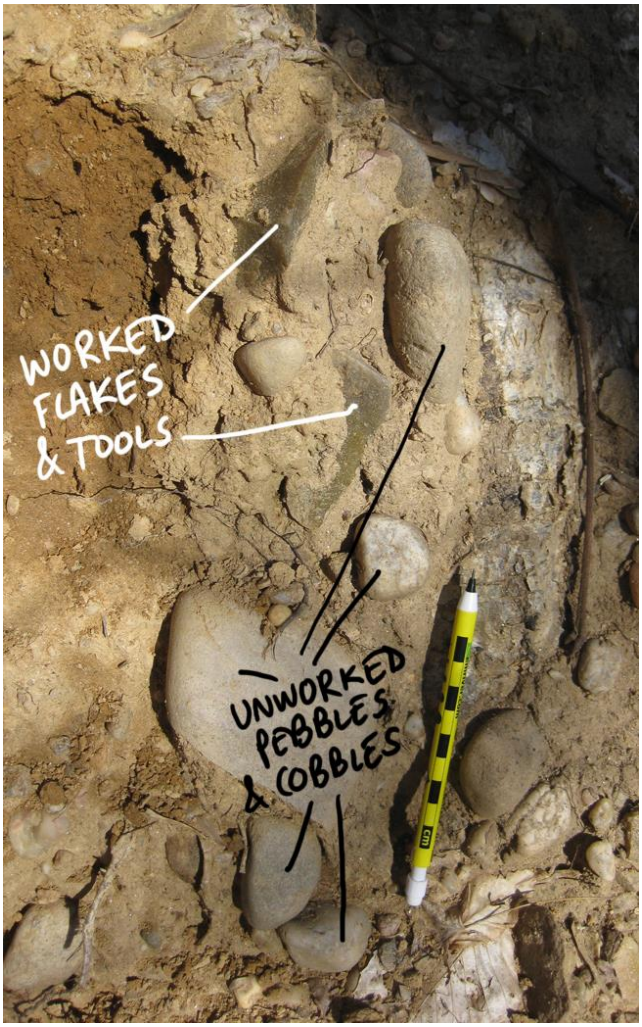
Beginning about 140 million years ago, forerunners of the Potomac River carried eroded pieces of Antietam quartzite and other rocks dozens of miles downstream and deposited them below the Fall Line zone. The deposits became part of a densely packed layer of rounded river rocks, gravels, sands, and silts called the Potomac Formation.

This resulted in the production of copious flakes of quartzite:

The famous ethnologist William Henry Holmes studied this site in the late 1800s, and his work is still quite accessible and enjoyable to read.

And here's another worked cobble, annotated to show the places where six different flakes were knocked off:





This site is on a bland-looking hillside less than 300 feet from the busy thoroughfare of 16th St. NW above a nasty-looking stretch of urban stream, a tributary of Rock Creek. It's a treasure trove of prehistorical archeology, though hardly pristine.

If you visit, ***remember not to remove any of the artifacts you find*** [italics and boldface added by editor]. Please leave them there for other folks who want to connect with the very different world of the precolonial past.

October 2021—Upcoming Events in Our Area/Region (see details below)

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

Disclaimer

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

Event Details

6: Washington, DC—Mineralogical Society of the District of Columbia; meetings via Zoom until further notice; info: http://www.mineralogicalsocietyofdc.org/.

18: Rockville, MD—Gem, Lapidary, and Mineral Society of Montgomery County; meetings via Zoom until further notice; info: https://www.glmsmc.com/.

25: Arlington, VA—Northern Virginia Mineral Club; meetings via Zoom until further notice; info: https://www.novamineralclub.org/.

27: Arlington, VA—Micromineralogists of the National Capital Area; meetings via Zoom until further notice; info: http://www.dcmicrominerals.org/.

Axinite, Calaveras County, CA. Photo: Bob Cooke.

THE NORTHERN VIRGINIA MINERAL CLUB INC

Crystals are the flowers of the Mineral Kingdom

2021 Club Officers

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president@novamineral.club
Vice President: Sue Marcus
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Secretary: David MacLean
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Treasurer: Roger Haskins
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Field Trip Chair: Vacant
Greeter/Door Prizes: Vacant
Historian: Kathy Hrechka
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Tech Support: Tom Burke
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Webmaster: Casper Voogt
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The Northern Virginia Mineral Club

Visitors are always welcome at our club meetings!

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

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

RENEW YOUR MEMBERSHIP!

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

OR

Bring your dues to the next meeting.

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

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

Meetings: At 7:45 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.*