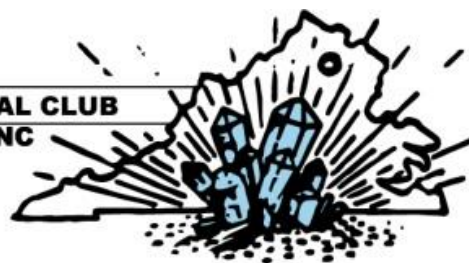




THE NORTHERN VIRGINIA

MINERAL CLUB
INC



The Mineral Newsletter

Meeting: December 15 Time: 6:30 p.m.

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



Holiday Party December 15, 6:30–9:30 p.m.

The NVMC and the Micromineralogists of the National Capital Area are jointly hosting this year's holiday party at the Long Branch Nature Center (our usual club meeting place).

The NVMC will pay for barbeque from Red Hot & Blue for every club member and for one guest. Additional guests (second, third, etc.) pay \$5 each. The MNCA will provide drinks.

We are asking club members, on a voluntary basis, to provide appetizers and desserts. To RSVP and to volunteer, just type the following spot link into your browser: <http://vols.pt/7JBb7Q>.

In the holiday spirit, we are asking club members, on a voluntary basis, to bring a wrapped gift marked FOSSIL, MINERAL, or LAPIDARY.

Please RSVP! Space at the nature center is limited, so if you are coming, please let us know! Use the spot link above or contact Jim Kostka at 202-207-5437 or by e-mail at jkostka@juno.com. ↗

**Holiday
Party**

**You're
Invited**

Volume 55, No. 10

December 2014

You can explore our club website:

<http://www.novamineralclub.org/>

Happy Hanukkah



Club Officer Elections Coming Up!

The NVMC will elect club officers for 2015 at the December meeting before the holiday party. The nominating committee—Dave Hennessey, Kathy Hrechka, and Ti Meredith—has nominated the following:

President Wayne Sukow

Vice-President... Kathy Hrechka

Treasurer Kenny Loveless/Rick Reiber

Secretary Dave MacLean

NVMC members:

If you have not yet paid your annual dues, now is the time! You can use the form on page 19.



The Prez Sez

by Wayne Sukow

GREETINGS OF THE SEASON!

Need I say anything more?

Yes—perhaps a bit of a review ... or reminiscing ... or good-bye to an NVMC year of good membership, along with excellent and varied programs that contributed to the full-house feeling and free-wheeling discussions at our meetings ... a year of great club auctions and auctioneers ... of great public service in the name of our mineral/lapidary hobby ... of great volunteers at our annual GMU club show and a full slate of candidates for 2015 NVMC officers ... and of a highly successful 2014 show with robust volunteer participation.

Join me and dozens of other club members for a celebratory season-ending party on December 15 at Long Branch Nature Center! It'll be great!

What did I learn in preparing this edition of THE PREZ SEZ? My initial approach was to emphasize the goodbye nature of our upcoming last meeting of 2014. So I began by looking up the provenance associated with the expression “good-bye.”

What I found was the following sequence ... “good-bye,” also “good bye,” “goodby” (1590s), derived from “godbwye” (1570s), itself a contraction of “God



Visitors browsing at the 2014 GMU club show. Photo: Sheryl Sims.

In this issue ...

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be with ye (late 1300s). “God” apparently became “good” through the influence of “good day,” “good evening,” etc.

That added a polish to a rough verbal gem!

Past Prez, Current Prez, Future Prez ...
WAYNE

λ.



Previous Meeting Minutes November 24, 2014

by Gerry Cox, *Secretary pro tem*; and Kathy Hrechka, *Vice-President*

President Wayne Sukow called the meeting to order at 7:40 p.m. He asked guests to introduce themselves; we had one guest, Kathy Ug, who has just completed a master's degree in geology with a thesis on crystallization of tourmalines. Wayne also acknowledged the past NVMC presidents in attendance, Rick Reiber and Barry Remer.

Wayne acknowledged all the hard work club members did to make the annual GMU club show, just completed the day before, such a resounding success. Special thanks went to our show co-chairs, Tom Taaffe and Jim Kostka. We had strong attendance, and the vendors expressed happiness with their sales.

Wayne announced that Fred Omstead had called to say that Georgia Omstead, a long-time club member, had passed away.

The attendees approved the minutes from the October meeting as presented in the newsletter. The nominating committee announced the 2015 slate for club office (see page 1).

Tom Taaffe and Jim Kostka announced preliminary results of income tallies from the GMU club show: \$5,649 from registration fees and \$1,200 from vendor fees. The attendance of so many Scouts (a total of 281), partly for the STEM (science, technology, engineering, and math) program, raised attendance levels. All the help and support we got from the GMU AΦΩ Service Fraternity at the kids' table and other functions made a huge difference.

The club Website went down shortly before the date of the show as inquiries about the show poured in; we will need to purchase more bandwidth in the future for the event. Wayne introduced our Webmaster, Casper Voogt, who does a great job on our Website but is unable to attend many club meetings.

The next meeting will be on December 15 starting at 6:30 p.m. at the Long Branch Nature Center; it will feature the club's holiday party—for details, see page 1. Mike Smith volunteered to place the order and pick up the food on the night of the event. Members are asked to volunteer to bring appetizers and desserts and to participate in a gift exchange.

Dr. Hans-Dieter Sues, Curator of Paleontology at the Smithsonian's National Museum of Natural History, delivered the program for the meeting. He spoke about the birdlike dinosaur *Anzu Wyliei*, dubbed "the Chicken from Hell."

Attaining a length of 11 feet and a weight of 500 pounds, this dinosaur had a birdlike beak and a tall crest on its head. Its long arms ended in digits with huge claws, and feathers fanned from the end of its long tail. Anzu, along with the fearsome predator T. rex and the large-horned Triceratops, were among the last dinosaurs to roam the North American continent. Dr. Sues claimed partial credit for Anzu's discovery.

Dr. Sues also discussed other discoveries from the Hell Creek Formation, a famous fossil area that covers much of eastern Montana and extends into North and South Dakota. Fossils from the area date back to the time just prior to the mass dinosaur extinction that ended the Cretaceous Period 66 million years ago.

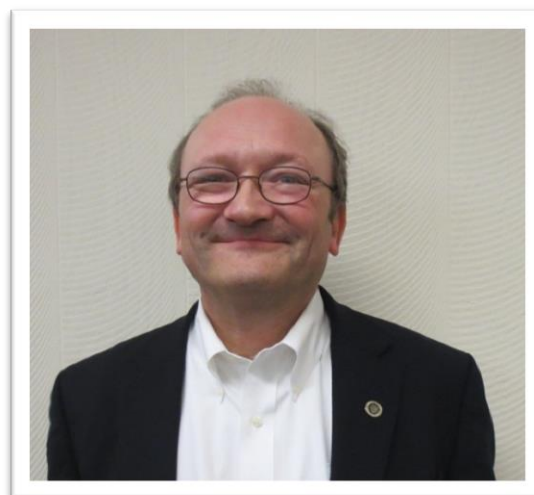
Dr. Sues spoke about "the Chicken from Hell," T. rex, Triceratops, and other dinosaurs, mostly smaller,

many of which are still not widely known. He also promoted a newly opened interim dinosaur exhibit at the museum. Called "The Last American Dinosaurs," the exhibit reveals the science about the lives and times of the dinosaurs discovered in the Hell Creek Formation.

Program Chair Kathy Hrechka presented Dr. Sues with a \$500 donation from our club, payable to the Smithsonian Institution.

"Thank you very much for your hospitality yesterday evening," Dr. Sues wrote in response. "I really enjoyed talking to your group and was delighted by their interest. I wanted to send you a note to thank you and the membership of the club for your generous donation to my department. I passed the donation on to the Chair of the department, Dr. Brian Huber, who joins me in thanking you." ➤

*Dr. Hans-Dieter Sues,
Curator of Paleontology
at the Smithsonian
Institute's National
Museum of Natural
History.*



*"Chicken
from Hell"
(Anzu
Wyliei).*

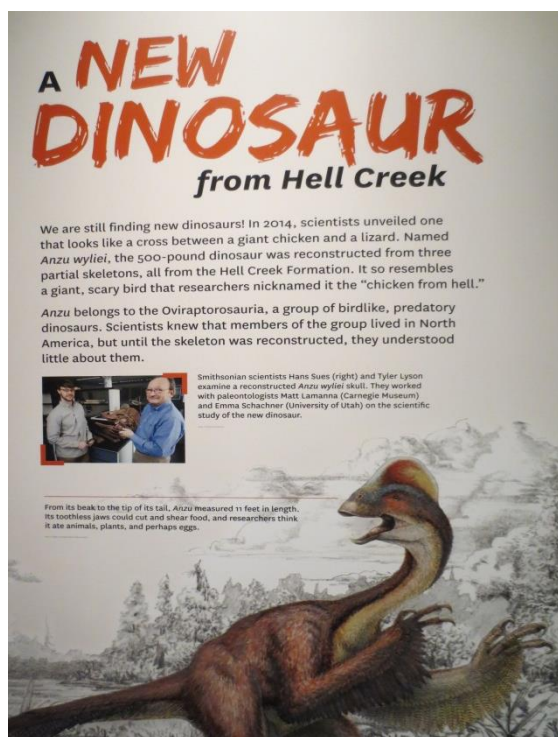
“The Last American Dinosaurs”: Smithsonian Exhibit

by Kathy Hrechka

Come to the newly opened exhibit at the Smithsonian National Museum of Natural History to meet some of the last great dinosaurs to roam North America! Discover how their reign crashed to an end 66 million years ago! Only one dinosaur group—birds—survived. The specimens in the exhibit all come from the Hell Creek Formation, a fossil-rich layer of rocks in Montana, North Dakota, and South Dakota. ➤



... open during
the holidays!



Tylor Lyson and Dr. Hans Sues.



Fossil lab at the Smithsonian.



Dr. Kirk Johnson, Sant Director of the Natural History Museum, and Dr. Hans Sues, with maps of the Hell Creek Formation.



Annual Club Show at GMU

by Kathy Hrechka, Vice-President

The Northern Virginia Mineral Club held its 23rd annual mineral show at George Mason University on November 22–23. The show was sponsored by Dr. Julia Nord, associate professor in the Department of Atmospheric, Oceanic and Earth Sciences. This year's event also included Boy Scouts of America STEM (science, technology, engineering, and math).

Tom Taaffe, show cochair, arranged for more than 20 mineral dealers, many of them club members, to display their wares. The other show cochair, Eagle Scout Jim Kostka, organized the team of about 50 club members who put on the show. Students from the GMU geology club provided a food kiosk, and the Alpha Phi Omega Student Fraternity helped in the Kids' Mini Mines and Fossil Digs activity area. Other



Volunteers Kenny Loveless, Sheryl Sims, and Patrick Green (a GMU student) at the registration table for the club show. Photo: Sheryl Sims.

activities included a fluorescent mineral room, a micro-mounting corner, educational display cases, a Scout Corner with rock samples, and a silent auction.

Tom Petruzzi, the Powhatan District STEM Coordinator for the Boy Scouts, introduced a STEM program to the mineral show. Altogether, 281 Webelos



Top: Volunteer Karen Lewis with a display on cabochon making. Photos: Sheryl Sims.



John Kress at his sales table with grandson John A. Kress, 3-1/2 years old. Photo: John Kress.

and Cub Scouts earned their geology pins and belt loops by rotating through two classes and three GMU labs in paleontology, microscopes, and geology. Dr. Julia Nord and the NVMC provided instructors to teach the classes and staff the labs. After completing the assignments, each Scout received a complimentary bag of 20 identified rocks and minerals provided by the Northern Virginia Mineral Club. The Scouts completed 60 percent of the STEM Nova Science Everywhere Award.

At the end of the show, the Boy Scouts presented Dr. Julia Nord with a white lab coat with her name monogrammed along with the STEM logo, in gratitude for her efforts to promote geology at our show. ➤



A spectacular display, courtesy of David and Leslie Nanney.



Boy Scout Conrad Smith teaching geology in the Scout Corner. Photo: Kathy Hrechka.



Club Co-Chair Tom Taaffe and his wife Beth Smith. Photo: Kathy Hrechka.



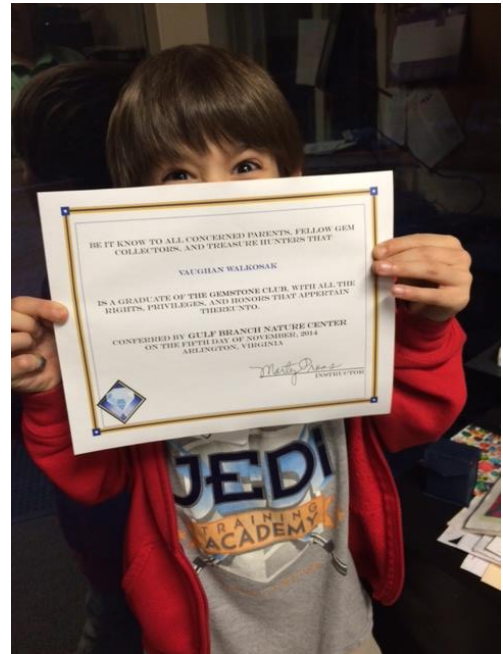
Scouts, along with Tony Petruzzi, presenting Dr. Julia Nord with a specially monogrammed lab coat. Photo: Kathy Hrechka.



Child with Autism Completes Gem Club

Vaughan Walkosek (shown below holding his certificate), a third-grader at Hoffman–Boston Elementary School in Arlington, VA, recently completed Gem Club at the Gulf Branch Nature Center. His eyes shone with delight after completing a year of classes and earning a huge glass diamond in reward.

Congratulations to Vaughan! And thanks to his parents, to Gem Club teacher Marty Pross (a naturalist with Fairfax County Parks), and to Jim Kostka and Bob Cooke for helping Vaughan develop his mineral collection!



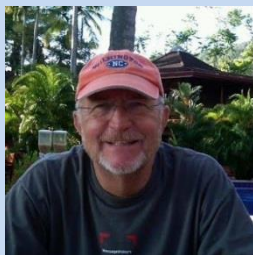
Cub Scout pack 910 using geology posters on a trip to Luray Caverns in October 2014. The posters were developed by Conrad Smith and NVMC.



Christmas tree ornament from Bronner's, image courtesy of Sue Marcus.

Do You Make Cabochons?

NVMC member Michael Smith is interested in hearing from other club members who make cabochons and might be interested in getting together regularly or occasionally to show and tell or ask about what they have been working on. He also invites anyone who is interested in actually seeing a cab made to contact him. You can contact him at Bikers2@comcast.net or 703-244-8833.





EFLMS Urges Rockhounds: Follow the AFMS Code of Ethics!

by Shirley Leeson, President, American Lands Access Association

Editor's note: The article is adapted from EFLMS News (October 2014), pp. 7–8.

These pictures could have been taken at your favorite collecting site anywhere in the United States. But they were taken by the U.S. Forest Service office in Missoula, MT, and the site is the famous quartz crystal collecting area at Lolo Hot Springs. Located in Montana but close to the border with Idaho, the area has been a field trip destination for clubs in the Northwest for many years.

But now the entire area is closed to rock collecting. A greedy few went in and left huge holes, pits, and trenches; the Missoula Forest Service law enforcement team told me the destruction is even worse farther back in the forest. The culprits were looking for something to sell—something that will probably show up at a swap meet or show many miles away.

We all know people who have taken home lots more than they can use, and we've called them rock hogs; but this goes far beyond that and has untold consequences. These deep holes and trenches are death traps for wild animals. Moreover, they paint all of us rockhounds with the same damning brush: the government and the public can't tell the difference between us, so we all get blamed.

So let's all make a point of abiding by the AMFS Code of Ethics when we're collecting. We've always prided ourselves on leaving the place where we collect in a better condition than when we found it.

We can also take a few simple steps. First, contact the Forest Service or other agency that manages the area where you plan to collect and get the rules and regulations for the collecting site. Then take a picture of the collecting site when you arrive and one when you're ready to leave. Finally, leave the pictures with the Forest Service or other agency, along with the dates of your arrival and departure. That way, the authorities have a record of your compliance with the rules and regulations.

And if you're with a field trip group, offer to clean up the area! Leave the authorities with a better picture of who and what a rockhound really is. ➤





AFMS Code of Ethics



A large measure of the enjoyment of our hobby consists of collecting in the field. For that reason, the members are proud to endorse the following:

- I will respect both private and public property and will do no collecting on privately owned land without permission from the owner.
- I will keep informed of all laws, regulations, or rules governing collecting on public lands and will observe them.
- I will, to the best of my ability, ascertain the boundary lines of property on which I plan to collect.
- I will use no firearms or blasting material in collecting areas.
- I will cause no willful damage to property of any kind, such as fences, signs, buildings, etc.
- I will leave all gates as found.
- I will build fires only in designated or safe places and will be certain they are completely extinguished before leaving the area.
- I will discard no burning material—matches, cigarettes, etc.
- I will fill all excavation holes that might be dangerous to livestock.
- I will not contaminate wells, creeks, or other water supplies.
- I will cause no willful damage to collecting material and will take home only what I can reasonably use.
- I will practice conservation and undertake to utilize fully and well the materials I have collected and will recycle my surplus for the pleasure and benefit of others.
- I will support the rockhound project H.E.L.P. (Help Eliminate Litter Please) and will leave all collecting areas devoid of litter, regardless of how found.
- I will cooperate with field-trip leaders and those in designated authority in all collecting areas.
- I will report to my club or federation officers, the Bureau of Land Management, or other authorities any deposit of petrified wood or other materials on public lands that should be protected for the enjoyment of future generations for public educational and scientific purposes.
- I will appreciate and protect our heritage of natural resources.
- I will observe the Golden Rule, will use good outdoor manners, and will at all times conduct myself in a manner that will add to the stature and public image of rockhounds everywhere.



George Loud: Lifelong Mineral Collector

by Shellie T. Newell

Editor's note: The article was adapted by Kathy Hrechka from The Hound's Howl (newsletter of the Aiken Gem, Mineral and Fossil Society, Aiken, SC), September 2014, pp. 6–7, and placed in The Mineral Mite (newsletter of the Micromineralogists of the National Capital Area), September 2014.

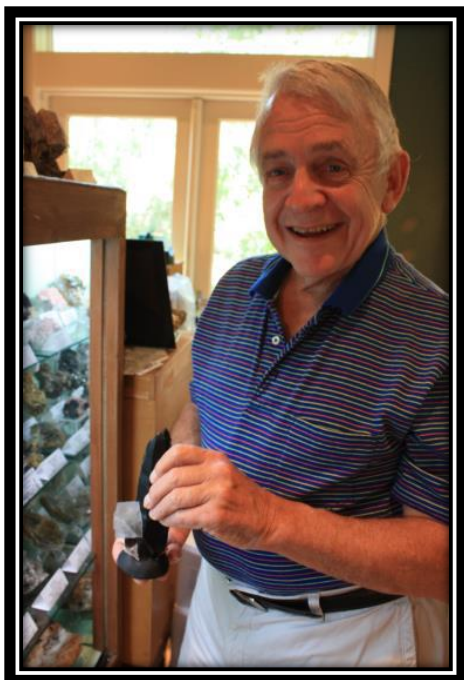
Last spring, together with fellow rockhounds, I visited George Loud, a member of the Aiken Gem, Mineral and Fossil Society in Aiken, SC. Retirement hasn't slowed George down, but he took time from his busy schedule to talk to us.

A consummate storyteller, George regaled us with tales about people he's known during a lifetime of collecting minerals. His earliest mentor was Charles McPherson from Memphis, TN (1910–2004). George was then age 14. "Memphis is built on a pile of dust," he said, "blown over from Arkansas' alluvial deposits." Charlie introduced George to the Memphis Archaeological and Geological Society.

George later became friends with many of the movers and shakers in the AMFS. From 1997 to 2004, he served as the AMFS Conservation and Legislation Chair. He lobbied in Washington, DC, while writing a popular monthly column in the *AFMS News* called "Loud & Clear."

A longstanding member of the Northern Virginia Mineral Club, George served as club vice-president in 1990 and as president in 1991–92. In 1992, George inspired the NVMC to hold its first annual gem, mineral, and fossil show. His motivation for getting the show going came from his good friend Paul Smith (now deceased, Paul was a member of the Micromounters Hall of Fame). Paul told George that the club had tried to hold a show before and that it would never work. George turned out to be NVMC Show Chair for 6 or 7 years; he is very proud that the annual club show is still flourishing and even growing.

George's eyes twinkled when he showed us his "man cave," a light-filled room housing his mineral collec-



All photos:
Shellie T. Newell

tion. Two long aisles were lined on either side with tall, well-lit cabinets replete with amazing specimens, many of them self-collected. At the end of the aisles was George's micromounting station, a card catalog, a typewriter, and tools. George told us he has over 9,000 cards on file documenting nearly all the specimens he has ever collected.

"Of course, many have been sold or donated over the years," George said, "but I still have some of the first minerals I ever collected with Charlie."

➤





EFMLS Program at Wildacres: Best Bargain Vacation Ever!

by Gerry Cox (all photos courtesy of Gerry Cox)

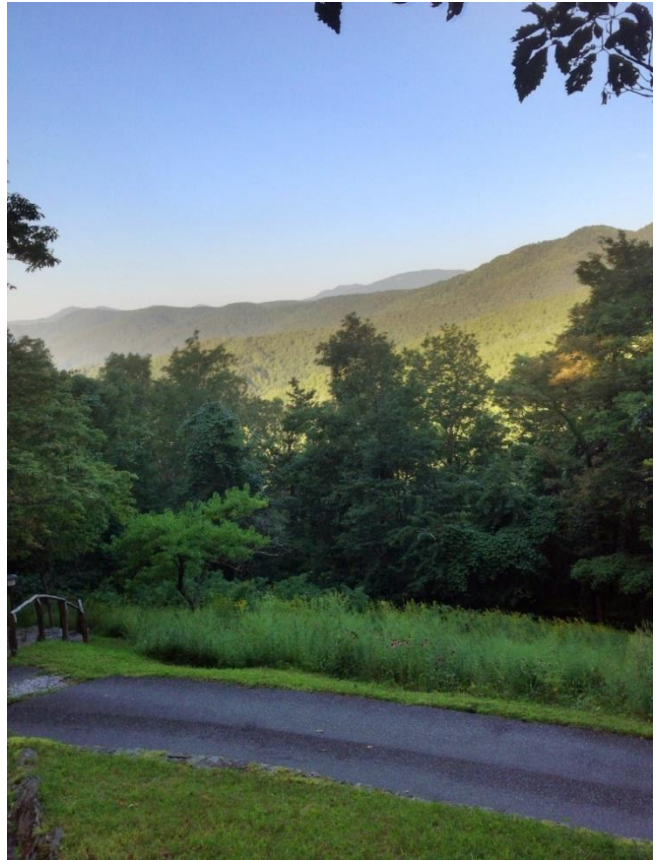
Helped by a generous grant from the Northern Virginia Mineral Club, four of us went to Wildacres in September 2014. All of us appreciate your support for the best bargain vacation and learning experience!

Arriving at Wildacres

The event began with an informal dinner in Wytheville, VA, where about 20 attendees stopped on their way to Little Switzerland, NC. (Just a hint: you won't find Little Switzerland on your GPS; it is probably listed as Marion, although the closest town is Spruce Pine, a stop on the Blue Ridge Parkway.)

Since check-in time at Wildacres is after 3 p.m., Karen Lewis and I ate at the café in Little Switzerland, which had the most amazing smoked trout. Before that, we went to several rock stores. We also stopped at the Alpine Inn to say hello to Susan and Ron Lough and enjoy their unique view of the eastern slopes. No, the bear wasn't there that day, although bears, flying squirrels, and huge flocks of birds frequent the location, along with migrating monarch butterflies. I love to watch the humming birds on the porch while sipping coffee in the morning.

We arrived at Wildacres and got our room assignments—two students share a room and bathroom. I got confirmation of my soapstone carving class and Karen got confirmation of her glass engraving and



etching classes. Because we arrived at 3 p.m. on the dot, we had the luxury of sitting on the rocking chairs on the patio and soaking up the afternoon sun. We reconnected with old friends and met new ones from all over the eastern seaboard, along with a smattering of folks from the West.

At dinner, Karen and I met the Thompsons, new members of the NVMC. Neither Karen nor I had attended club meetings since the Thompsons joined our club, so meeting them was a pleasant surprise and we hope to start another long friendship. We ate together in a beautiful dining hall; at Wildacres, one never leaves the table hungry.

Great Classes

The sessions began with an introduction to Wildacres and its history, and then we got to meet our teachers. The instructors share their skill and knowledge with students on a voluntary basis. I feel so grateful to the wonderful instructors for making the experience so much fun!

My instructor, Sandy Klein, came from Canada to teach the class. I had never done sculpture in my life, yet in 4 days I created four soapstone carvings, amazing myself! Sandy's excellent instruction was the key.

Over the years, I have taken classes in photography of minerals, photography of jewelry, photography of rocks in nature, gem identification, silversmithing, lost wax casting, cabochons, and faceting gemstones. My husband, Walter, was unable to attend this ses-



Sample photos from my past photography classes.

sion, but in the past he has taken a class called Wildacres Wild, along with classes in geology, soapstone carving, silversmithing, lost wax carving, scrimshaw, and faceting.

The classes give you an opportunity to try new skills and determine whether you like something and want to learn more. Walter and I learned that we love faceting, cabochons, and silver work; so we both do these activities at home. I set up a studio to do photography as well. We never would have developed these skills without trying them at Wildacres.

Karen Lewis will not admit to how many years she and Louis Dowell have attended Wildacres, but they are faithful attendees. Karen said that she has taken every course at least once. She usually wears a chainmail bracelet she made, and you can see her beautiful wirewrap from time to time. I think Louis Dowell has taken every class offered, as well. After starting at Wildacres, in fact, both Karen and Lewis taught lapidary in the Arlington continuing education program for many years.

Walter and I have many more sessions to go before we will have exhausted the curriculum of classes,



My soapstone carvings at Wildacres this year.



because so many wonderful classes exist. Others include fused glass, lampwork beads, intarsia, cold connections, and more.

Each year, a keynote speaker presents five lectures on topics related to our hobby. The speakers are all outstanding representatives in their fields, and students expand their knowledge at these events. Wildacres also has an auction where we acquire many things for our collections, be it wine, fossils, minerals, lapidary material, jewelry, or other items.

On the day off, many participants go on a field trip to a great collecting area. Each year, the site changes, so regular attendees get a chance to explore new areas. Others spend the day relaxing or visiting the area shops, making trips to Ashburn or local caves, or hiking mountain trails. Wildacres has many hiking trails; participants can hike for miles and never leave the Wildacres property.

On Saturday afternoon, we all displayed our products, and a representative from each class talked about the session. That night, rather than the usual Phun Night, we attended concerts by the recorder and dulcimer classes and then watched an informal jam session by the musicians in the canteen. The musicians were at Wildacres at the same time as the Eastern Federation of Lapidary and Mineralogical Societies.

Signing Up

If you are a member of a club that belongs to the EFMLS, you are eligible to attend. No experience is necessary—most classes are taught at the beginner level. Completing a class qualifies you to advance to an intermediate class in the curriculum in the next semester.

All this sounds expensive, right? Well, the cost is \$390 for room, board, and classes; there is also a lab fee for materials. The lab fee varies by class, with silver usually the highest, running up to \$65. In addition, you get to keep and wear whatever you create! Funds from EFMLS and the Blumenthal Foundation subsidize the expenses of the educational program at Wildacres.

The next session will be from May 18 to May 24, 2015; the fall date is not yet set. The rhododendrons and mountain laurels should be in full bloom during spring semester, and the mountains will be beautiful. To learn more and to register (starting on January 1, 2015), you can go to <http://efmls-wildacres.org/> ➤

Just love reading these things ...

Thanks to Sue Marcus for the submission!

A “lexophile” is someone who loves plays on words, such as, “You can tune a piano but you can’t tuna fish” or “To write with a broken pencil is pointless.” A competition among lexophiles is held every year; here are sample submissions:

When fish are in schools, they sometimes take debate.

A thief who stole a calendar got twelve months.

When the smog lifts in Los Angeles U.C.L.A.

The batteries were given out free of charge.

A dentist and a manicurist married. They fought tooth and nail.

A will is a dead giveaway.

With her marriage, she got a new name and a dress.

A boiled egg is hard to beat.

When you’ve seen one shopping center you’ve seen a mall.

Police were summoned to a daycare center where a three-year-old was resisting a rest.

Did you hear about the fellow whose entire left side was cut off? He’s all right now.

A bicycle can’t stand alone; it’s just two tired.

When a clock is hungry it goes back four seconds.

The guy who fell onto an upholstery machine is now fully recovered.

He had a photographic memory that was never developed.

When she saw her first strands of grey hair she thought she’d dye.

Acupuncture is a jab well done. That’s the point of it.

And the cream of the twisted crop:

Those who get too big for their pants will be totally exposed in the end.

Always laugh when you can—it’s cheap medicine!



The Rocks Beneath Our Feet: A Quartz Outcrop in Virginia

by Hutch Brown, Editor

When I was 11, our family moved into a brand new suburb in Fairfax County, not far from what is now Northern Virginia Community College. The area was still largely undeveloped, and my friends and I explored the surrounding woods, especially along our local stream, a tributary of Accotink Creek.

One of our discoveries was an outcrop of white boulders on a wooded hill overlooking Long Branch creek. We called the outcrop Rock Fort.

Last winter, I went to see whether Rock Fort was still there. The entire area has long since been developed, with only a narrow greenway left along the creek. But I remembered where Rock Fort was in relation to the creek, and I figured out where it should be—off a street with the promising name of Stone Haven Drive.

It wasn't hard to find. Despite the trash and graffiti, Rock Fort is still an impressive jumble of massive boulders made up of pure white quartz with occasional tinges of red, pink, and orange. The outcrop is huge, covering an area about the size of a small city park, with boulders more than 14 feet high.

The outcrop is located in Virginia's Piedmont geologic province, where the predominant rock is metamorphic. So how did the quartz get there?

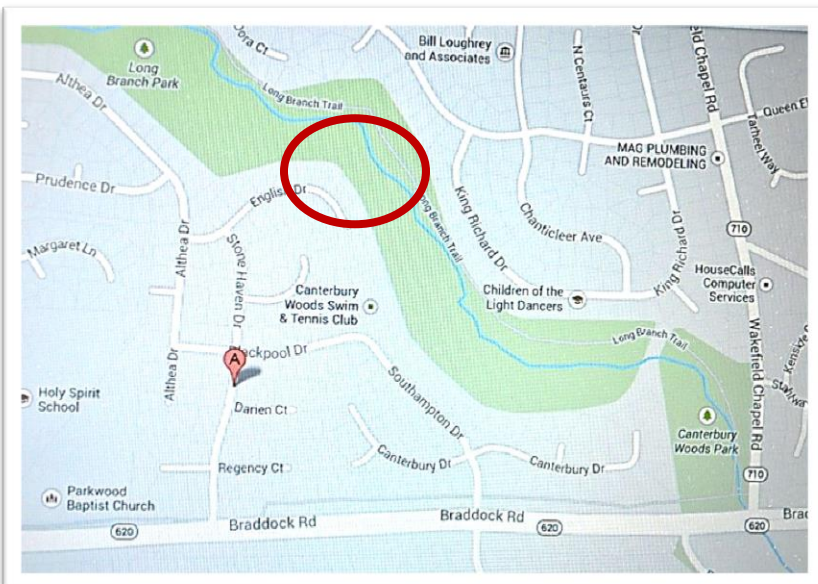


A massive quartz outcrop atop a hill in Annandale, once dubbed "Rock Fort" by kids. The quartz is mostly white in color, but with shades of red, pink, and orange. Photos: Hutch Brown.



Quartz Lens

Rock Fort is embedded in a dark gray metamorphic rock called Lake Barcroft metasandstone (fig. 1). The bedrock ranges from a relatively coarse meta-arenite (arenite is derived from *arena*, the Latin word for sand) to a finer grained metagraywacke (graywacke is an intermediate rock between sandstone and shale). Both formed from sands and silts that ocean currents laid down in the Iapetan Ocean, forerunner of the Atlantic.



Location of Rock Fort (circled) along Long Branch in Annandale. The main cross streets are Braddock Road (bottom) and Wakefield Chapel Road (right), which goes to Northern Virginia Community College.

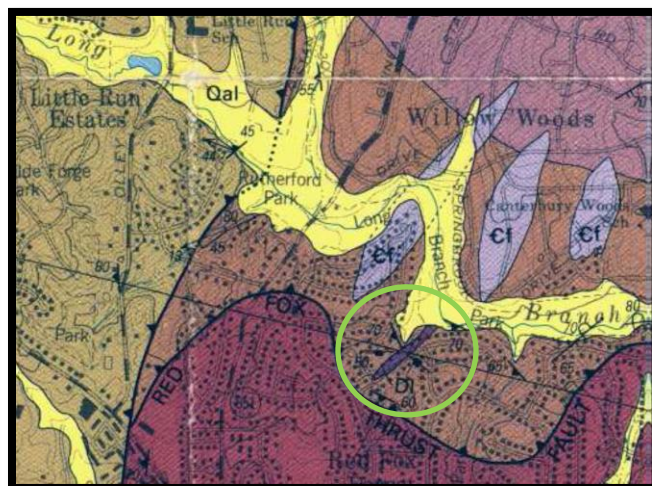


Figure 1—Rock Fort is shown in purple, circled in green. Yellow is alluvium (sand, gravel, etc.) in Long Branch creek; dark brown is Lake Barcroft metasandstone. Rock Fort is a massive quartz lens in the metasandstone. (The lilac is not quartz but rather an igneous intrusive rock known as tonalite.) Source: Drake (1986).



Lake Barcroft metasandstone mixed with quartz in Long Branch creek below Rock Fort. The Rock Fort quartz provides most of the alluvium in the creek. Photo: Hutch Brown.

Geologists believe that Lake Barcroft metasandstone is early Cambrian or late Proterozoic in origin, making it more than half a billion years old. It started as flat sedimentary rock; mountain-building forces lifted it onto dry land, where it formed part of an ancient volcanic island arc known as the Taconic terrane.

About 450 million years ago, the Taconic terrane slammed into proto-North America in another mountain-building event. The Taconian Mountains have long since eroded away, but the underlying terrane, including the Lake Barcroft rock, is still sutured onto the continental plate.

About 320 million years ago, the proto-African continent closed the Iapetan Ocean, colliding with proto-North America and riding up over it to form a mountain chain as high as the Himalayas. In the process, it broke off entire sheets of underlying bedrock and transported them to the west on great thrust faults, folding and fracturing them and forming the Piedmont geologic province as we know it today. The bedrock underwent tremendous metamorphism, some of it becoming the Lake Barcroft metasandstone.

Lens Formation

So how did the Rock Fort quartz lens form in the Lake Barcroft bedrock? No one knows for sure, but at least two possibilities exist, both associated with hydrothermal processes during mountain-building events.

One possibility is a quartz intrusion. Surface water seeping through cracks in the rock percolates deep

underground, and porous rock layers such as sandstone can contain substantial amounts of groundwater. During mountain-building events, rising magma heats the water underground, saturating it with minerals and forcing it through cracks in the rock back up toward the surface.

Tectonic forces fold and fracture the overlying rock, creating fissures—some of them huge—for the superheated water to fill. Toward the surface, the water gradually cools and the minerals precipitate out into the fissures; the chief mineral in the Lake Barcroft rock is silica, forming veins of massive quartz.

A more likely possibility is that the parent rock—whether sandstone or metasandstone—underwent pressure from tectonic forces during a mountain-building event, secreting quartz to form a gradually thickening vein. Quartz veins formed in this way, some of them massive, are common in metamorphic rocks. The process is called lateral secretion, and the



One of the tallest boulders at Rock Fort tops 14 feet. Graffiti attests to community neglect. Photo: Hutch Brown.



Quartz vein in schist.

result is known as segregation quartz. At Rock Fort, the quartz vein is absolutely enormous—perhaps tens of feet thick.

Some quartz veins contain minerals other than silica. The northern Virginia Piedmont is known for its gold-bearing quartz, and quartz veins near Fairfax sometimes contain pyrite cubes and black tourmaline crystals. At Rock Fort, I checked many exposed rock surfaces but found only milky quartz, the cloudiness caused by minute inclusions of gas or liquid.



Rock Fort quartz in various hues.

In places, the quartz ranges from pink, to orange, to reddish brown due to trace amounts of iron or manganese in the rock. In fact, oxidation of the iron or manganese has had the effect of turning many rock surfaces black.

The great quartz blocks loom over the site because the surrounding metamorphic rock is highly vulnerable to weathering. It forms a red clay soil around Rock Fort, which owes its durability to the erosion resistance of quartz.



Quartz boulder at the foot of Rock Fort. Iron or manganese oxide covers most of the rock surface, turning it black. The surrounding metasandstone has weathered away, forming a red clay around the erosion-resistant quartz boulders. A fox or other animal has dug out the clay, forming a den in the cracks between rocks underground. Photo: Hutch Brown.

Other Quartz Outcrops

I hadn't thought of Rock Fort in nearly 50 years. What jogged my memory was a sign I saw along the W&O trail in Arlington, where I live. It was a trail marker pointing out a nearby rock formation called Brandymore Castle, another quartz outcrop on a hill overlooking a creek—in this case, Four Mile Run.

Before seeing Brandymore Castle, I decided to rediscover Rock Fort, and I was duly impressed. Rock Fort has dozens of boulders filling an area the size of two suburban lots (to the doubtless dismay of developers), with boulders more than twice my height. As kids, we really did use it as a fort, forming teams and utilizing its heights and recesses for defense and sneak attack.

By contrast, Brandymore Castle was disappointing. It fills a small area (perhaps 50 by 50 feet), with the tallest boulder no more than 5 feet high. To call it a



Rock Fort (top), shown only in part, is far larger than Brandymore Castle (bottom), shown virtually in its entirety. You can imagine kids having great fun in the former—in the latter, not so much. Photos: Hutch Brown.

castle is a stretch, whereas (in my humble opinion) Rock Fort was aptly named by us kids.

However, Brandywine Castle has a history. As a landmark, it was used as early as 1724 to survey property boundaries. Clearly visible on a hill at a time when Arlington was mostly open farmland, it might have resembled a ruined old castle, with Four Mile Run at the base of the hill as a moat.

Like Rock Fort, Brandywine Castle is a quartz lens embedded in yet another layer of metamorphic rock, this one called the Sykesville Formation. Quartz outcrops in the Piedmont are fairly common; you can easily pick them out on any geologic map. Arlington has only one (Brandywine Castle), but most map quadrangles in northern Virginia contain several. I intend to explore others; if any seem worth seeing, I will describe them in future newsletters.

Visiting Rock Fort

Rock Fort has obviously been forgotten, given over to trash, graffiti, and invasive English ivy. The greenway trail is on the opposite side of Long Branch; no marker announces Rock Fort, as it does for Brandywine Castle—no bridge over the creek invites you to see it, and no trail leads up to it.

Yet it is a striking geological feature, and it is easily accessible, right off a quiet street with plenty of parking in the Annandale neighborhood of Stone Haven. Because there is no trail, you will need to bushwhack down a moderately steep hill, but not far. The best time is from late fall to early spring, when the underbrush and poison ivy aren't an issue.

To get there, take Braddock Road toward Fairfax. After crossing I-495, watch for Wakefield Chapel Road on the right. After the intersection, take the second right onto Stone Haven Drive and follow it to the end. Turn right onto English Drive and look for the gap between houses on the left.

The gap leads into Long Branch Park. Rock Fort begins just a few feet away from the sidewalk and reaches halfway downhill toward the creek. ➤

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Rock Fort lies off the sidewalk next to a quiet suburban street in Annandale, at the top of a hill overlooking Long Branch creek. Photo: Hutch Brown.

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The quartz page. 2010. Photos: A.C. Akhavan.
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Upcoming Events (of interest in the mid-Atlantic region)

December 2014

13: Minerals, Fossils, Beads, and Jewelry Show & Sale; Holiday Inn Hotel, 9615 Deereco Road, Timonium, MD; 10–4:30; free admission; contact Mike at 330-726-9529.

January 2015

11: Rocks on the Mall; Audubon Naturalist Society; program led by Joe Marx, 1–4; 2-mile loop to see rock in facades, fountains & walls; Audubon members \$24, nonmembers \$34; information: www.ANShome.org/adultnatureprograms

February 2015

14: 25th Annual Mineral, Jewelry & Fossil Show; Southern Maryland Rock and Mineral Club; Show Place Arena, 14900 Pennsylvania Ave, Upper Marlboro, MD; Sat 10–5; admission \$5, senior citizens & students \$4, children 12 & under and Scouts in uniform free; contact Michael Patterson at mi-chael.patterson@pgparks.com.

March 2015

7–8: 52nd Annual Earth Science Gem and Mineral Show; Delaware Mineralogical Society, Inc.; Delaware Technical & Community College, 400 Stanton-Christiana Road, Newark, DE; Sat 10–6, Sun 11–5; \$6 adults, \$5 seniors, \$4 children 12–16, under 12 free; <http://www.delminsociety.org>

21–22: 51st Annual Gem, Lapidary & Mineral Show; Gem, Lapidary & Mineral Society of Montgomery County; Montgomery Co. Fairgrounds, Gaithersburg MD; Sat 10–6, Sun 11–5; \$6 for 12 & older, children free, Scouts in uniform free.

28–29: 46th Annual Che-Hanna Rock and Mineral Club Show; Athens Twp. Vol. Fire Hall, 211 Herrick Ave, Sayre, PA; Sat 9–5, Sun 10–4; contact Bob McGuire uvbob@epix.net

28–29: 15th Mineral Treasures & Fossil Fair 2015 Annual Show; the Philadelphia Mineralogical Society & the Delaware Valley Paleontological Society; LuLu Temple, 5140 Butler Pike, Plymouth Meeting PA (2 miles from Norristown exit, PA Turnpike); Sat 10–5, Sun 10–4; admission \$5, 11 & under \$1, uniformed Scouts free; information: www.philamineralsociety.org

28–29: 65th Annual EFMLS Convention and Show, sponsored by the Catawba Valley Gem and Mineral Club; Hickory Metro Convention Center, Hickory, NC.

April 2015

10–11: Annual Atlantic Micromounters Conference; Micromineralogists of the National Capital Area; Springhill Suites Alexandria Marriott, 6065 Richmond Hwy, Alexandria, VA. Registration at www.dcmicrominerals.org/.

18: Annual Jewelry Gem & Mineral Show; Patuxent Lapidary Guild, Inc.; Earleigh Heights VFC on Rte 2 in Severna Park, MD; 10–5; 10 and over \$1, under 10 free.

May 2015

18–24: Wildacres; Little Switzerland, NC; \$390 + materials fee; registration starts Jan 1; information at <http://efmls-wildacres.org/>

October 2015

23–25: AFMS Convention and Show, hosted by the Southwestern Federation; Austin, TX.



A mixed display at the NVMC's mineral show at George Mason University in November 2014. Some beautiful wood is shown here—not everything was rock or mineral! Photo: Sheryl Sims.





MEMBERSHIP APPLICATION FOR
THE NORTHERN VIRGINIA
MINERAL CLUB, INC.
www.novamineralclub.org



Please Indicate:

New Member: _____

or Renewal: _____

Dues Payment enclosed is for
calendar year 201____

Fees are due January 1st or upon
submission of a new application.

* New membership dues paid after
June will be prorated for ½ year.

**Collecting trips / field trips
can only be attended by
NVMC club members who
are current with dues
payment and are in "good
standing."**

Application for Membership

Date: _____

Name: _____

Street: _____ Apt / Unit #: _____

City: _____ State: _____ Zip Code: _____

Phone: _____ Cell: _____

E-Mail: _____

Email is needed to receive newsletter electronically

Applying for:

Individual Adult: (over 18) (\$15.00/yr*) Name: _____ adult _____

or Family Membership: (\$20.00/yr*) Name: _____ adult _____

Family is defined as one ad-
dress.

Maximum 2 adults living in same
home and children under 18 years of
age residing at same address.

Name: _____ adult _____

Name: _____ adult _____

Name: _____ youth _____ age _____

Name: _____ youth _____ age _____

Name: _____ youth _____ age _____

Name: _____ youth _____ age _____

Hobby Related Interests (check all that apply)

Minerals ____ Fossils ____ Artifacts ____ Micromounts ____ Field Trips ____

Lapidary ____ Tumbling ____ Carving ____ Jewelry ____

Other (please describe) _____

The Club Newsletter is distributed by email using G-Mail. Electronic versions are full color and approximately 1MB in size (Other arrangements to receive the Newsletter by regular USPS mail can be arranged, but there may be an extra yearly charge). The membership lists, emails and your contact information is kept private and is only used for club business or hobby related distributions. If you are concerned about privacy issues, please specify the items that you wish to remain private. _____

I do hereby waive all right to hold *The Northern Virginia Mineral Club, Inc.* and its Officers liable for any personal injury or loss sustained by me or any member of my family while participating in club activities. I also agree to adhere to the rules and regulations of *The Northern Virginia Mineral Club, Inc.* as set forth by its bylaws.

Signature of Applicant: _____

Please pay at meetings or mail to: **Northern Virgin-
ia Mineral Club, P.O. Box 10085, Manassas VA
20108**



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

The Northern Virginia Mineral Club

You can send your newsletter articles to:

news.nvmc@gmail.com

Visitors are always welcome at our club meetings!

RENEW YOUR MEMBERSHIP!

SEND YOUR DUES TO:

Kenny Loveless, Treasurer, NVMC
PO Box 10085, Manassas, VA 20108

OR

Bring your dues to the next meeting.

Purpose: To promote and 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, <http://www.amfed.org/efmls>) and the American Federation of Mineralogical Societies (AFMS—at <http://www.amfed.org>).

Dues: Due by January 1 of each year; \$15 individual, \$20 family, \$6 junior (under 16, sponsored by an adult member).

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

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