

GEM & MINERAL JOURNAL

MAY 2013

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Official Monthly
Publication of the Gem &
Mineral Society of
Lynchburg, VA, Inc

WWW.LYNCHBURGROCKCLUB.ORG

Presidents Message

Hello To All,

It is great to get back into the swing of things. The field trip to the Rutile Mine Saturday was great. The weather was excellent, the rocks were plentiful and we explored some new places we haven't seen before. You don't know what you are missing by not venturing out on field trips.

Dave Woolley was contacted by one of our past Presidents this month, Bill Albee, who is retired now and wanted to donate his faceting machine for the Club to use as a teaching tool at our workshops. Dave gave the information to Dave Callahan, and he and Nona & I went to Westminster Canterbury and brought back the machine and accessories to the Workshop. It's an older machine but in pristine condition. Thank You Bill for such a generous gift. The Club now has I think five faceting machines, I believe its time to have a hands on class in faceting gemstones. Let me know if you are interested. For

those members that haven't attended a Club workshop, you will be amazed at the lapidary equipment the Club has to offer. Come on out and see for yourself. I can't think of any lapidary project that we can't complete.

If any of you have any information on the Lynchburg Rock Club and its beginnings back in the 1950's, please let me know. Perhaps I or someone that is interested can write an article on the Club's history. This should be an interesting project, offering insight and information that all members would be interested in. The idea for this project was sparked by meeting Bill Albee, past President. He said his membership began in 1958. I had no idea the Club started that long ago. Let's find out more details about the beginnings of our Club.

That's all for now, I hope to see you all at the May 15th meeting.

Keep Looking Down,
John Haskins

From the First VP:

As this article is being planned, I'm safely inside where it's warm, dry and quite comfortable. My senses are telling me that I'm safe and secure even though it's terribly dark outside. Ominous dark grey clouds have gathered over the trees on the horizon. Maybe they foretell a tornado, lots more rain, or worse. Our 5 senses keep us well informed about what is going on around us. Women, you also have that "intuition" thing going for you, but can you also use that gift in identifying rock and mineral specimens? Maybe

so, but the rest of us will have to rely on the 5 basics as Andrew Alden describes in his article that follows.

How Geologists Use Their Five Senses
By [Andrew Alden](#), About.com Guide

"Geology is more and more an instrumental science, but work in the field still calls for trained senses. And amateurs can go far simply by using the tools our bodies are born with. Our sensory impressions are the basis of observations that in turn may lead to more tests in the lab.

Continued on page 15

April Meeting Minutes

Meeting- Wednesday April 17, 2013 @ 7:00 PM

Attendance- 34 members and 4 guests

Host- Thom and Linda Noble for the April meeting, and Jack Curtin will be our host for the May meeting.

On Time Drawing- Winners were: Gabriella Desmond, Bill Speck, Noel Weller, Tom Powers, Cindy Mitchell

Old Business- John Haskins: Monthly workshops will be held the 2nd Saturday of each month at Dave Callahan's. There will be extra work shops to help get everything ready for Uncle Billy's Day. The workshops are scheduled for 4/20; 5/4; 5/11 from 9AM. John was contacted by a casting director about a reality show on Emerald Mining- more to follow on this.

Thom Noble mailed a survey to all club members and looks forward to getting replies back. This is an effort to find out what club members would like to do as a club.

V.P.- Jack Curtin: Tonights program will be a DVD on The Formation of Minerals.

Second V.P.- Dave Callahan: upcoming field trips: ; 4/20-Bergin Quarry in NC; 4/27-American Rutile in Nelson County & Sterling Hill Mine in Franklin NJ; 5/4 & 5/11: workshop at Dave's; 5/4: Glendon NC Field Trip; 5/25: Our DMC Trip to Piney River Quarry; 6/1: Uncle Billy's Day & Field trip to Mill Point WV; 6/8: workshop at Dave's; 6/29: Cotton Patch Gold Mine in NC; 7/27 Enterprise Mine in Appomattox; 7/26-7/28-Franklin NC Gem and Mineral Trips; 8/2-8/4: Spruce Pine Field Trips and Shows; Dave also has Club T-Shirts available.

Treasurers Report- Franklin Midkiff: Balance at this time \$7,282.36

New Business: Dave Woolley has acquired a faceting machine and will need some help getting it from Westminster and set up at Dave Callahan's. He passed around a rock to see if anyone could identify it. Cindy announced a new show to watch for on the weather channel- "Prospectors" on Tuesday and Saturday.

Minutes Submitted by:

Linda Noble, Secretary

2013 ELECTED OFFICERS

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Bernardino Rivera &

Tony Shields

COMMITTEE

CHAIR PERSONS:

Field Trips- David Callahan

Hospitality- Monthly Volunteers

News Articles- Natalie Darling

Silent Auction- Warren Darling

Swap for Rocks- Warren Darling

Website- Casper Voogt

Workshops- Dave Callahan

FRA Adult Liaison- OPEN

Membership- Thom Noble



PROGRAMS

Our April Program was a video on “The Formation of Minerals,” and for the May meeting Dr. Steve Lenhart will give a talk on Gold.

Many of our members are gold prospectors, and with the ever soaring gold prices this should prove to be a most interesting topic. Please join us ~

May 15, 2013

7:00 PM

Lynchburg Parks and Recreation

Fairview Center

3621 Campbell Ave. Lynchburg, VA

Bench Tips by Brad Smith

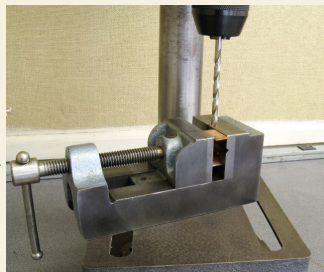
More Bench Tips by Brad Smith are at:
[groups.yahoo.com/group/Bench Tips/](http://groups.yahoo.com/group/Bench%20Tips/)
 or [facebook.com/Bench Tips](http://facebook.com/Bench%20Tips)

DRILL PRESS VISE

A drill press vise is a versatile tool to hold a workpiece securely and in precise alignment. It reduces the risks of working with high power motors, use of larger drill bits, and higher heat generated in the operation. The vise can be clamped to the drill press table if needed and is quite handy for bench use to hold things for sawing or riveting.

You can find them at stores that carry machine tool supplies. My feeling is that the best ones are made from steel. And I like the ones with V grooves cut into the jaw plates to help hold a punch straight up or to hold a rod horizontal.

To find a supplier, search on "vise" or "drill press vise" at micromark.com
use-enco.com smallparts.com
grizzly.com sears.com



DENTAL GOLD

You might think that a couple pieces of dental gold would be valuable, but if you only have a small amount, it can be a problem. You might think you could melt it and roll out your own sheet. However, the trace metals that dental gold contains to make it a good material in your mouth cause it to crack if you try to forge it or roll it out as a sheet.

Sending it to a refiner is expensive for small amounts of metal, so a reasonable alternative is to try incorporating it into your jewelry. If you have enough material to do a casting, that's probably the best use for dental gold. If not, try melting it on a solder pad and while molten, divide it into small pieces with your solder pick and then flow the metal again to make little gold balls for use as accents on your designs.

FIELD TRIP REPORT... UP COMING FIELD TRIPS

2nd VP Report

April Field Trip ~ American Rutile Quarry Nelson County, VA. April 27, 2013

This Saturday was perfect for a field trip. The air was cool, clear and bright. There were no bugs and only a few ticks but the poison ivy was leafing out and was heavy in places. We had an eager group of 21 rockhounds and we all found a spot and started digging. Some were just cracking rocks looking for pretty material to make a variety of products such as bookends, spheres, clock faces, candles and cabochons. Some were searching for rutile crystals and yard rocks. The beautiful color combinations of white, blue, red and black made it difficult to choose. Some of us spent some time investigating the ruins of the massive concrete buildings trying to visualize the extent of the operations there. The land owner has

Contact Information for Field Trips

David Callahan,

Field Trip Chairman

Home phone: 540-297-1853

Cell Phone- 540-874-5201

E-mail dbc11@aol.com

some photographs of some of the structures and I will attempt to get a copy.

The last of us departed about 3PM and some of us stopped by the Tye River to check out a few more rocks. We were looking for green epidote and red jasper. We actually found some nice pieces to make some interesting jewelry. It is always a great spring field trip with interesting and colorful material to make club and personal projects. *Thank You Thom and Linda Noble for submitting the photographs for all to enjoy.*



UP COMING FIELD TRIPS

THIS IS THE GMSL HOSTING FOR THE MAY 2013 DIXIE MINERAL COUNCIL FIELD TRIP

We need both GMSL and RVMGS club members to help with the quarry sign-in.

If you can assist, please be at the quarry by 7:30 AM.

An Official Field Trip of The Gem & Mineral Society of Lynchburg, VA. Inc. (HOST) An Official Field Trip of the (Roanoke Valley Mineral & Gem Society, Inc.)



9:00 AM EDT to 2:00 PM

Saturday, May 25, 2013

**Boxley Aggregates, Piney River Quarry (Amherst County)
739 Warrick Barn Road, Arrington, VA.**

(Sign-up is required....sign up at the meeting, email me or call me. See contact info below)

COLLECTING: According to the mindat.org Web-site, the following minerals are listed from Minerals of Virginia, 1990 edition. Some on this list have not been found on our past field trips. (An (*) indicates those known finds on past field trips)

Anatase: A greenish-brown replacement of ilmenite.

Ilmenite: Black metallic or highly weathered masses. (*)

Kaolinite: White powdery masses from the alteration of feldspar. (*)

Quartz: Light blue to white (*)

Rutile: Reddish-brown metallic to highly weathered masses. (*)

Tacharanite: White, dull to pearly. Occurs with the weathered anatase, rutile and ilmenite.

Zoisite var: Thulite: Veins of pink thulite occur in the feldspar. (*)

Additional minerals: **Pyrrhotite:** (has been verified) (*) Silvery metallic when fresh but weathers to a dark rusty color when exposed to the weather.

Pyrite: Small crystals and masses (*)

The main rock mined here is called **APLITE**. It is **very hard**, light-colored, and fine-grained and consists primarily of sodic plagioclase feldspar and quartz in the groundmass and, in some cases, orthoclase feldspar phenocrysts. Like pegmatites, aplite dikes may represent a residual fraction on silica-rich magma after most of the magma has crystallized.

Remember that the availability of these minerals depends on where they are working in the quarry at the time of the field trip and how many stock piles are available. Note that some of the occurrences are very small.

DIRECTIONS: From Lynchburg, VA., follow US 29 By-pass north to Amherst. Continue on the US 29 by-pass for about 2 miles until you come to Rt.151 (Patrick Henry Highway). Turn Left on Rt. 151 and continue for about 6 miles and turn left on RT. 665 (Warrick Barn Road). The entrance road to the quarry will be in about 1 mile on the right.

MEETING LOCATION & ASSEMBLY TIME:
8:00 to 8:45 AM. At the quarry scale house / office. You will need sufficient time to read the required Boxley Hazard Training information, fill out and sign the Hazard Training Certificate and sign the required Boxley waiver of liability form. *Continued on next page*

UP COMING FIELD TRIPS

continued from page 5

There will also be a review of the site specific hazard training and safety regulations by the quarry Superintendent. Everyone must be present for this presentation. If you are late, you will not be permitted to enter the quarry. We all will enter the quarry as a group about 9:00 AM.

All safety rules will be strictly enforced or you will be escorted out of the quarry and barred from future field trips.

EQUIPMENT: The Boxley Quarries are very safety-conscious. **Standard quarry PPE (personal protective equipment) gear is required or you will not be permitted to enter the quarry.** Hard hat (see mfg. date below), steel-toe boots, safety glasses, good protective clothing and gloves must be worn. It could be very cold, wet or hot in the quarry, so dress according to the weather forecast that morning. Be sure to bring plenty of water and snacks. Bring your own collecting equipment such as rock hammers, chisels, buckets and newspaper to wrap your delicate specimens. We will be allowed to drive into the quarry. Bring rain gear in case of bad weather. **HARD HAT NOTICE: CHECK THE MANUFACTURE DATE, LEFT SIDE, UNDER THE BRIM IN THE SMALL CIRCLE ON EITHER SIDE OF THE ARROW. If you see a 1 on either side it was made in 2011, a 0/7 is 2007. If it's older than 5 years, it must be replaced. This is a New Federal rule enforcement. You must comply or be rejected.**

AGE LIMIT: Children of all ages will be allowed but it will be the parent's responsibility to keep them under control at all times and see that they obey all

the safety requirements. **The same dress and PPE requirements apply.**

NOTE: Severe weather or other crisis out of our control may result in the canceling or rescheduling of this trip. If there is any question, please call me to confirm the trip.

CONTACT: David Callahan, Field Trip Chairman. The Gem and Mineral Society of Lynchburg, VA. Inc.

Web site www.LynchburgRockClub.org

Home Phone [540-297-1853](tel:540-297-1853)

Cell [540-874-5201](tel:540-874-5201) (the day of the trip please)

Email dbc11@aol.com

**Boxley Quarry
Mill Point, WVA.**

June 1, 2013

**Meet at the quarry at 8:15AM
Standard quarry gear is required
Collecting Agatized Coral**

We are guests of the Kingsport
Gem and Mineral Society

Royce Wickham will be the field trip leader for the
GMSL and RVMGS

(Sign-up is required....sign up at the meeting, email me or call me. I will send you more information)

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Rock Raiders

Diamond Dan Publications, www.diamonddanpublications.net is a website where children and adults can find fun and educational “rockhound” related material including puzzles, publications, and information links. Below are a couple of links from the site where you can download “Free Fun Stuff” - Enjoy!

<http://www.diamonddanpublications.net/mineral-trading-cards.html>

<http://www.diamonddanpublications.net/minerals-from-china.html>

<http://www.diamonddanpublications.net/mineral-history.html>

HELP NEEDED:

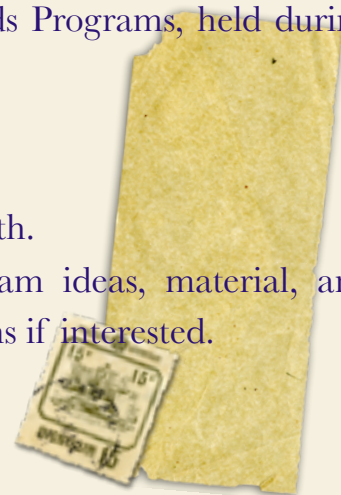
We are currently looking for someone to lead our Junior Rockhounds Programs, held during the business portion of our regular club meetings.

Qualifications:

Desire to enrich and cultivate interest in the earth sciences among youth.

Prior experience not necessary. Several club members have program ideas, material, and support available to assist in this endeavor. Please contact John Haskins if interested.

Our ROCK RAIDERS THANK YOU!



Upcoming Events

MAY 2013

May 17-19- Treasures of the earth Gem, Mineral Fossil, Jewelry & Bead Show- Martinsville National Gaurd Armory, 315 Commonwealth Blvd, Martinsville, VA (Across from Liberty Fair Mall)


May 25- GMSL will host a DMC Field Trip to Boxley's Piney River Quarry. Many volunteers are needed- See pages 5-6 for details or contact Dave Callahan.

May 25- Annual Chesapeake Gem & Mineral Show. Ruhl Armory, 1035 York Rd. (I-695, exit 26B) Towson MD. Hours 10am-4pm.

May 24-26-Treasures of the earth Gem, Mineral Fossil, Jewelry & Bead Show- Salem Civic Center, Salem, VA (toteshows.com for details)

June 2-3- EFMLS Convention & Show Hosted by The Island Rockhounds and Suffolk Gem & Mineral Club. Smithtown, NY
EFMLS Meeting Friday, May 31.

June 28-30- Treasures of the earth Gem, Mineral Fossil, Jewelry & Bead Show- Augusta Expoland, Fishersville, VA (toteshows.com for details)

SUN	MON	TUES	WED	THURS	FRI	SAT
			1	2	3	4
5	6	7	8	9	10	11 workshop
 19 <i>Mothers Day</i>	13	14	15 Meeting 7PM	16	17	18
	20	21	22	23	24	25 DMC Field Trip
26	27	28	29	30	31	

ATTENTION ALL CLUB MEMBERS

Workshops will be held regularly on the second Saturday of each month at Dave Callahan's. Start time is 9:00 AM, but come anytime and stay as long as you'd like. There is a store/deli about a mile down the road if you want to break for lunch and return.

The workshops will be open format, and the purpose will be for club members to learn how to use the lapidary equipment to turn rough specimens into finished lapidary pieces for their own personal use. Experienced members will be available to help teach and assist.

We have a great set up with several sets of wheels for cabbng, faceting machines, saws, and much much more. From time to time there may be special class offerings, so be sure to let us know what you are interested in.

Workshops are open to club members only, and due to liability we can not allow guests or non-members at our club workshops. Remember, membership is just \$15.00 per year for the fist family member and \$3.00 for each additional family member.

We're Off to See the Wizard!

by Cheryl Neary ~ Reprinted from May 2013 EFMLS News

We're off to see the wizzard- the wonderful wizzard of all---Oh! I mean off to see the convention---a wonderful convention to be!

The Eastern Federation Convention will be held on Long Island, New York, with the first planned event a lighthouse tour on Friday, May 31st in the afternoon, followed by a Cracker Barrel session, and the Annual Meeting at 7:30 pm. Events are planned till Monday, June 3, 2013.

Information is now on the website! Packets will have been mailed to you by the time you read tis!

This is the first EFMLS Convention to be held on the Island! Both the Island Rockhounds and the Suffolk Gem & Mineral Club will be co-hosting this wonderful event. We have also been extremely lucky to have the Long Island Mineral and Geology Society, the Nassau Mineral Club and the New York Mineral Club to help pitch in.

The theme for the show is Long Island Lighthouse and Geology! We have seminars planned

by local guest speakers- an opportunity for you to learn about our unique geology. In addition, the show has demonstrations planned, showcases to view and activities for the youngsters of all ages!

The Cranker Barrel session is a great time for people to network and learn what is working for other clubs.

There is certainly plenty to do on this island! This weekend I visited the local winery in the town of Sayville- Loughlin's. There are numerous museums, nature preserves and of course shopping! Plan on spending several days and exploring the city that never sleeps- New York City- a stones throw away or a hop skip and a jump.

Please contact me if you have any questions about the EFMLS event or suggestions for places to visit. I can be contacted at either <ciervo.neary@gmail.com> or via my cell at 516-449-5341.

I am personally looking forward to meeting you all!

See Show Flyer on Page 14.



Welcome to our Newest Club Member:
Judy Browning, from Lynchburg, VA

Behind Closed Doors

By Ellery Borow, EFMLS Safety Chair

Reprinted from May 2013 EFMLS News

We live in a country that often airs its dirty laundry for the world to see. We tend to focus news reports (and even our video games) on war, violence, crime, the taking of life and so on. We often tend to hide the best news on the back pages, behind closed doors, or just not talk about it at all. Well, I'm sorry to say that these safety articles tend to follow that same convention. We write about accidents, falls, hearing loss, foreign bodies in the eye, and so on. Well, what I'd like to do with this article is throw the safety doors open wide and illustrate the good news about safety.

Imagine, if you will, a trip to collect rocks that goes something like this:

You gather the family and load the truck with collecting tools and supplies. You have a pleasant drive to the dig site. At the collecting area you catch up with other club members and spend the morning making find after find, some of which are treasures indeed! Everyone takes a break at noon for a great picnic lunch. While sitting on a comfortable rock you note a nice crystal right by your foot- a crystal that really deserves to be in your collection- what a day! You have several chats with your fellow collectors about sharing information concerning the best places to dig. At the end of a wonderful day of collecting, everyone packs up their tools, trash and treasures, and then loads up the truck. You thought you'd found so much that the kids would have to be tied on top of the truck for the ride home. (A place they really like to ride.)

But, oh well, you somehow manage to find space for the kids in the jump seat behind the drivers seat. You get home after another pleasant drive. Once home and unloaded you find yourself tired but not too tired. You start going through your finds and doing some preliminary cleaning. One rock begs to be windowed to see what is inside. You perform some quick lapidary work and are amazed with your new treasures. This has been a good day, a good day indeed!

Gee, isn't that a boring story! Everything goes right! And that, dear reader is the reason for safety! Before that good day, the truck was checked/ serviced, safety gear (boots, gloves, safety goggles, etc) was gathered, and the weather forecast, roads and route were checked. On the day of the trip food was safely prepared and stored; safety gear observed. The lapidary equipment had it's guards in place all safety measures were observed. There were no injuries because everyone was prepared, thoughtful and careful.

All those safety precautions make a good day but also a boring day. Maybe that's why good news often does not make the front pages. Still, boring is good when you have nothing but pleasant experiences during a day of collecting-- no injuries, no accidents, no reason to break out the first aid kit, no dust in the lungs. Yes, I'll take boring every time--except for an occasional great crystal quietly hiding by my foot.

Lets make our collecting boring--and safe!

Popular Mineralogy

Fascinating mineralogy and earth science for the amateur mineralogist and serious collector - #41

Minerals in the Spring

by Andrew A. Sicree, Ph.D.

Mineral springs

Travel the back roads and by-ways of America and before long you will encounter a town or hamlet bearing the name “Mineral Springs.” Sometimes the town name is more specific, such as “Alum Springs” in Virginia or “Radium Springs,” a town of about 1700 residents northwest of Las Cruces, New Mexico. Towns bearing the name “Sulfur Springs” appear in Texas, California, and Kentucky, as well as other states, and there is a village called “Hot Sulfur Springs” in Colorado. This is only a small sampling of the “Mineral Springs”-type place names that speckle America. As one might suspect, these towns are named for nearby mineral springs. But what is a mineral spring and how does it differ from an ordinary spring?

A little hydrology

Rain falls on the ground and that which doesn't evaporate or run into nearby streams, percolates underground. Once below ground, rainwater will descend to the “water table” which is the upper surface of what is called the “saturated zone” underground. In the saturated zone water fills all of the cracks and joints in the bedrock and all of the spaces between grains of sediments.

If the saturated zone (the water table) comes to the surface at any point, water can flow out of the ground. The water table hits the ground surface at the banks of many streams and ponds and they gain water from underground. This, by the way, is what keeps many streams flowing even when it has been weeks since the last rainfall.

When the water table intersects with the ground surface at points uphill from the local streams, springs will result. Water will seep out of the ground and trickle downhill to the nearby streams. Often, but not always, these springs produce good quality water and they were utilized for

drinking purposes. Many people still prefer to drink “spring water” and a good portion of the bottled-water industry exploits natural springs for this purpose.

Mister, can I drink from that waterhole?

Early settlers soon noticed that not all springs were so refreshing. Some springs were warm or even boiling – these we call “hot springs” – and others tasted bad, smelled worse, or were hard on the digestion. In a few cases, spring water might even be poisonous. There is more than just water coming out in these “mineral springs.” For instance, Wilson (James Wilson, *A Collector's Guide to Rock, Mineral, and Fossil Localities of Utah*, 1995) notes occurrences of springs made poisonous by dissolved selenium in the uranium-rich Poison Strip area east of Crescent Junction, Utah.

It wasn't long, however, before resourceful speculators and quack doctors decided to turn a liability into an asset by promoting mineral springs as healthful. Throughout the late 1800s and into the 1900s, patients suffering from a wide variety of ailments were sent off to spring-side sanitariums, spas, and resorts to “take the waters.” They swam and soaked in the springs and drank mineral waters for their therapeutic values. Health benefits may have been uncertain, but popular vacation resorts grew up around the springs as first one then the next became the trendy spot for the wealthy and famous. The popularity of mineral spring resorts continues to this day.

Where are the minerals?

Mineral springs produce more than just water. Water can dissolve minerals, and waters that contain a substantial portion of dissolved minerals are termed mineral waters. Typically, these waters contain gases, sulfur compounds, and a variety of salts. You may hear the term “total dissolved solids” or TDS used to describe the concentration of dissolved minerals. The US Environmental Protection Agency recommends that drinking water contain less than 500 parts per million (500 milligrams per liter of water) or total dissolved solids.

Continued on next page

Minerals in the Spring... *Continued from page 11* with more than 1500 ppm (1500 mg/L) TDS are labeled as having “high mineral content.”

So where do the dissolved solids originate? As ground water passes through rock, it will dissolve any minerals it encounters. Of course, many minerals (e.g. quartz, corundum, etc.) aren't very soluble, especially in cold water. Carbonate minerals such as calcite (CaCO_3) and dolomite ($(\text{Ca,Mg})\text{CO}_3$) and sulfate minerals such as gypsum ($\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$) will dissolve, and halide minerals such as halite (NaCl) and sylvite (KCl) dissolve very readily. When a mineral like halite goes into solution in the groundwater, it dissociates into sodium (Na^+) and chloride (Cl^-) ions. Much of what makes up the total dissolved solids of many natural waters is in the form of ions such as calcium (Ca^{2+}), magnesium (Mg^{2+}), carbonate (CO_3^{2-}), bicarbonate (HCO_3^-), sodium (Na^+), and chloride (Cl^-) ions. If you evaporate these waters, compounds such as calcium carbonate (calcite) and sodium chloride (halite) will precipitate as solids. Warmer waters found in thermal springs will dissolve more minerals than cooler water and at higher temperatures even sparingly soluble minerals like quartz begin to dissolve.

Types of mineral springs

Not all “mineral springs” are the same. Some are called “sweet springs” but because the water is quite low in dissolved solids, they scarcely deserve to be called mineral springs.

Alum is $\text{KAl}(\text{SO}_4)_2 \cdot 12\text{H}_2\text{O}$ and alum springs contain higher levels of potassium (K^+), aluminum (Al^{3+}), and sulfate (SO_4^{2-}) ions. You may be familiar with synthetic crystals of alum that are often sold at mineral shows. Alum can also be found in your grocery store with the canning supplies. Drinking water from alum springs can give one diarrhea and other gastrointestinal problems.

Chalybeate springs produce ferruginous, or iron-rich, waters. Containing dissolved iron(II) carbonate (siderite) and manganese(II) carbonate (rhodochrosite), the water has a distinct taste of iron. Among the notable chalybeate springs are Tunbridge Wells in England and the Sweet Chalybeate Springs of Allegheny County, Virginia.

Sulfur (sulphur) springs are notable for their strong rotten egg smell. Dissolved hydrogen sulfide (H_2S) escapes from the water and gives it a brimstone odor. Our noses are extremely sensitive to hydrogen sulfide and we can detect

extraordinarily low levels of hydrogen sulfide in air (most people can discern it at levels of 0.5 ppb – that's parts per billion!). The source of the hydrogen sulfide can be sulfide minerals such as marcasite and pyrite (FeS_2).

Saline spring waters typically contain dissolved chloride salts of sodium, calcium and/or magnesium. They have a strong salty taste, much like seawater.

Alkaline springs contain higher levels of alkalis or alkaline earth elements, such as sodium, potassium, lithium, calcium or magnesium ions, along with carbonate or hydroxide ions. Alkaline waters are more bitter and more basic (pH = 8 or higher) than other spring waters. Lithia springs contain lithium ions and calcic springs are high in calcium.

Soda springs contain excess dissolved carbon dioxide in the form of sodium carbonate or as the dissolved gas itself. At depth and under pressure, natural waters can dissolve carbon dioxide gas. Upon rising to the surface, some of these soda waters may effervesce (bubble up) like so much natural champagne, releasing bubbles of carbon dioxide. Carbonated water is also called “seltzer water.” Seltzer water originally referred to the effervescent mineral water obtained from the natural springs near the village of Niederselters in Germany but today seltzer water is produced artificially. Interestingly for mineralogists, the Yale chemistry professor Benjamin Silliman (for whom sillimanite was named) bottled and sold artificial seltzer water beginning in 1807. Flavored seltzer waters followed eventually leading to the flavored artificial mineral waters sold as Coca-Cola and Pepsi.

Spring water can be radioactive. Radon gas dissolves readily into groundwater but will rapidly escape from water on the Earth's surface. “Radium springs” contain traces of radium derived from underground uranium or thorium deposits. One hundred years ago, radium was valued as a wonder drug reputed to cure many diseases including cancer. A mineral spring that contained traces of radium was thought to be particularly healthful. Radium Springs near Albany, Georgia, produced radium-laced water and became the site of a spa and a casino. Radium Springs, New Mexico, is a village of about 1700 people just northwest of Las Cruces.

*Dr. Andrew A. Sicree is a professional mineralogist and geochemist residing in Boalsburg, PA. This **Popular Mineralogy** newsletter supplement may not be copied in part or full without express permission of Andrew Sicree. sicree@verizon.net*

UP COMING FIELD TRIPS

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Cotton Patch Gold Mine
New London, NC.
June 29, 2013

-----FEE SITE-----

*(Sign-up is required....sign up at the meeting,
 email me or call me.)*

*MORE INFORMATION IN THE JUNE
 NEWSLETTER AND AT THE MEETING*

Let's all help celebrate The Roanoke Valley Mineral
 & Gem Society's Golden Anniversary.

Enterprise Manganese Mine
Appomattox, VA
July 27, 2013

*(Sign-up is required....sign up at the meeting,
 email me or call me.)*

*MORE INFORMATION IN THE JUNE
 NEWSLETTER AND AT THE MEETING*

DMC FIELD TRIP FOR JUNE

**An Official Field Trip of Henderson County
 Gem & Mineral Society (Hendersonville, NC)**
(HOST)

Saturday, June 8, 2013 ~ 9:00 AM til dusk
Mason Farm Staurolite Prospect
Brasstown, North Carolina

FEE Site

Collecting: Staurolite crystals (Maltese and St. Andrew's crosses)---these are also known as Fairy Crosses (brown/gray to red-tinged well-formed crystals)

Gold (pan for it in small stream)

You will be digging in red clay, then sifting for the Staurolite crystals. This appears to be an alluvial wash with lots of loose crystals, mostly whole, as well as some crystals in matrix. Many of these are found within the first foot of soil, but they can be found as deep as three feet (especially the bigger ones). Crystals range in size from 1/4" up to over 2". Digging is allowed on the hillside and in the field. The boundaries are marked with flagging tape. There is a lot of room for digging.

The St. Andrew's crosses form an X and are plentiful. The Maltese crosses look like a large plus (+) or perfectly equal-sided cross. Single Blades are also found. Clusters of crystals are uncommon. Crystals on matrix can be found, but are much less common than loose crystals. Black sands are found in the small stream. Gold has also been found within the quartz. (I have NOT personally found any GOLD yet---too busy digging for Staurolite, but have seen some BLACK SANDS while washing the Staurolite crystals. The owner HAS found some GOLD, but I have not personally seen it).

For a site report, visit <http://wncrocks.com/magma/masonfarmstaurolite-1.html>

Cost: \$20 per person; children 12 and under are free. Everyone will be required to sign a liability release form when you pay your fee.

Field trip will go on RAIN or SHINE!!

Tools: screens and gold pan to collect gold and/or black sands; 1/4" screen and shovel (*minimum essential tools* needed to collect staurolite), bags, buckets, mattock, gloves, sunscreen, bug spray

Facilities: Port-o-lets on site. Clay's Country Store 2 1/2 miles away for snacks, drinks, lunch (or bring your own)

Parking: in a grassy field; the lower area gets slick in a hurry when it rains

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UP COMING FIELD TRIPS *continued from page 13*

(think *slick* red clay)

Site: open hardwood forest on hillside (not a lot of understory when visited this fall/winter), grassy field, small stream

Directions: From Franklin, North Carolina, head west on Hwy. 64 and go past Hayesville. Turn left on Hwy 141 South (at redlight), heading toward downtown Brasstown, following for 1.7 miles. Turn left at Clay's Country Store onto Brasstown Road, following for .6 miles, then left onto Folk School Road, following for .4 miles. The road forks and is named Mason Road (the one on your left). Follow Mason Road for 1 mile, then turn left onto Cedar Lane (gravel road). Follow Cedar Lane for .4 miles to the digging site, parking in the grassy field.

CONTACT for more information: Tim Barton (828) 885-8248 home, (828) 577-4505 cell
(NO CALLS AFTER 10:30 P.M.)

For the First Time Ever on Long Island

2013 - EASTERN FEDERATION OF MINERALOGICAL & LAPIDARY SOCIETIES SHOW

AN EVENT TO REMEMBER!

Gem, Mineral, Fossil & Jewelry Weekend Extravaganza!

"Long Island Lighthouses and Related Geology"

Hosted jointly by the Island Rock Hounds
and the Suffolk Gem and Mineral Club

The Eastern Federation of Mineralogical and Lapidary Societies, Inc. (EFMLS) was organized in 1950 with the goals of promoting the study of Earth Science, Lapidary Arts and related subjects and bringing together smaller clubs with like objectives. The EFMLS now encompasses about 150 local clubs from the District of Columbia and 21 eastern states, having a combined total of about 10,000 members.



The Sheraton Long Island
110 Motor Parkway, Hauppauge, NY 11788 (631) 231-1100

Show: Saturday and Sunday June 1-2, 2013
***Field Trip: Friday May 31, 2013**



VENDORS

- Gems
- Minerals
- Jewelry
- Fossils
- Beads
- And More

EXHIBITS
CHILDREN'S ACTIVITIES
HANDS-ON ACTIVITIES
DEMONSTRATIONS

One low admission price gives you access to all the vendors, lectures, activities, demonstrations and exhibits!

MINERAL DISPLAYS
ON LOAN FROM THE
SMITHSONIAN MUSEUM

LECTURES

Various lectures will be presented throughout the show. Saturday and Sunday Schedules to be announced.

* **FIELD TRIP:** Lighthouse and Coastal Erosion. There will be a nominal fee for Friday's field trip. Details will be announced.

For more information please contact Janice, Show Co-Chair via email at IslandRockHounds@hotmail.com
And check our website, IslandRockHounds.org, for updates as the show dates approach

From the First VP: continued from page 1

Touch

Your hands and fingers are the best thing for judging the content of sediments. Indeed, the U.S. Department of Agriculture says that evaluating soils by feel is the most accurate field method. With a little practice, it is easy to tell the general grain size of a sediment with your fingertips. A habit peculiar to geologists—nibbling on rocks—uses the extreme sensitivity of the teeth to tell the difference between shale or claystone and coarser grained rocks like mudstone. Together, hands and teeth are key tools in assessing muds and mudrocks. Hefting a rock in the hand tells you how dense it is, especially as you gain experience. And squeezing it, or hammering it, tells how friable it is.

Vision

Vision is so important for humans that it almost doesn't need mentioning. It is the first tool for identifying minerals, starting with their [luster](#), their [colors](#) and their crystal [habit](#). Indeed, we are so visually oriented that our eyes find patterns in data and images that may not even exist. Because our eyes literally cannot be trusted beyond simple perceptions, scientists use what they see as a suggestive beginning to their thinking rather than its definitive end.

Hearing

It pays to keep your ears open in the field, if only for safety reasons. You need to hear the stealthy approach of a flash flood, the creaky beginnings of a landslide, the signal of a rattlesnake or a partner's call to watch out. Sound can be used to gauge a rock's hardness and strength—one telltale feature of [slate](#), for instance, is the tinkling, even musical sound that pieces of it make when you strike them or toss them on the ground. Beyond these, though, [many different geologic events have their own sounds](#) that you might miss if you aren't listening.

Smell

The nose is more useful than they tell you in school. A [petroliferous odor](#) is a driller's clue that [crude oil](#) is present: it's kind of tarry, and much nicer than the smell of a gas station. The earthy smell of damp clay and claystone is called an argillaceous odor. You can use it as a quick indicator of whether a sandstone is a pure-quartz arenite or one with a fraction of clay. The nose is very sensitive to the smell of dangerous gases that may be found underground, such as hydrogen sulfide (rotten eggs) or sulfur dioxide (burnt matches). A "sulfurous" odor may be a mix of these and serves as a sign of sulfur minerals in a rock sample, especially when heated. And many arsenic-containing minerals give off a garlicky odor when burned; arsenopyrite smells like that when you merely hammer it.

Taste

There are times when the best thing to do is to use your tongue, like when you're working with [evaporite minerals](#). Taste is the definitive test for rock salt, the mineral halite. It's also a diagnostic feature for sylvite (bitter), borax (sweet and astringent), glauberite (bitter), epsomite (bitter), copiapite (metallic) and a few other oddball minerals. A lack of taste is useful information in soft white minerals, too."

I'm sensing that it is indeed time to wrap up this discussion of using taste, vision, touch, hearing, and smell to help us in the field. Please note that none of this may apply when the pollen is heavy!

Happy Hunting,

Jack Curtin

Natalie Darling, Editor
211 Chesterfield Rd.
Lynchburg, VA 24502



The purpose of the Gem & Mineral Society of Lynchburg, VA is to promote education in The Earth Sciences, including: Mineralogy, Geology, Gemology, Paleontology, and Crystallography



Lynchburg Rock Raiders is the official Future Rockhounds of America association of the The Gem & Mineral Society of Lynchburg, VA, Inc.



Reminder...

NEW MEETING LOCATION

Lynchburg Parks and Recreation
Fairview Center
3621 Campbell Ave.
Lynchburg, VA

DIRECTIONS: Fairview Center; 3621 Campbell Ave., Lynchburg, VA 24501 434-847-1751~ From Route 29 expressway or Route 460, take the Campbell Avenue Exit. Follow Campbell Ave. to 3621, which is across the street from a Citgo Gas Station. There is a fence around the building and parking on both streets running along the sides of the property as well as a lot in the back. We will be looking for you!